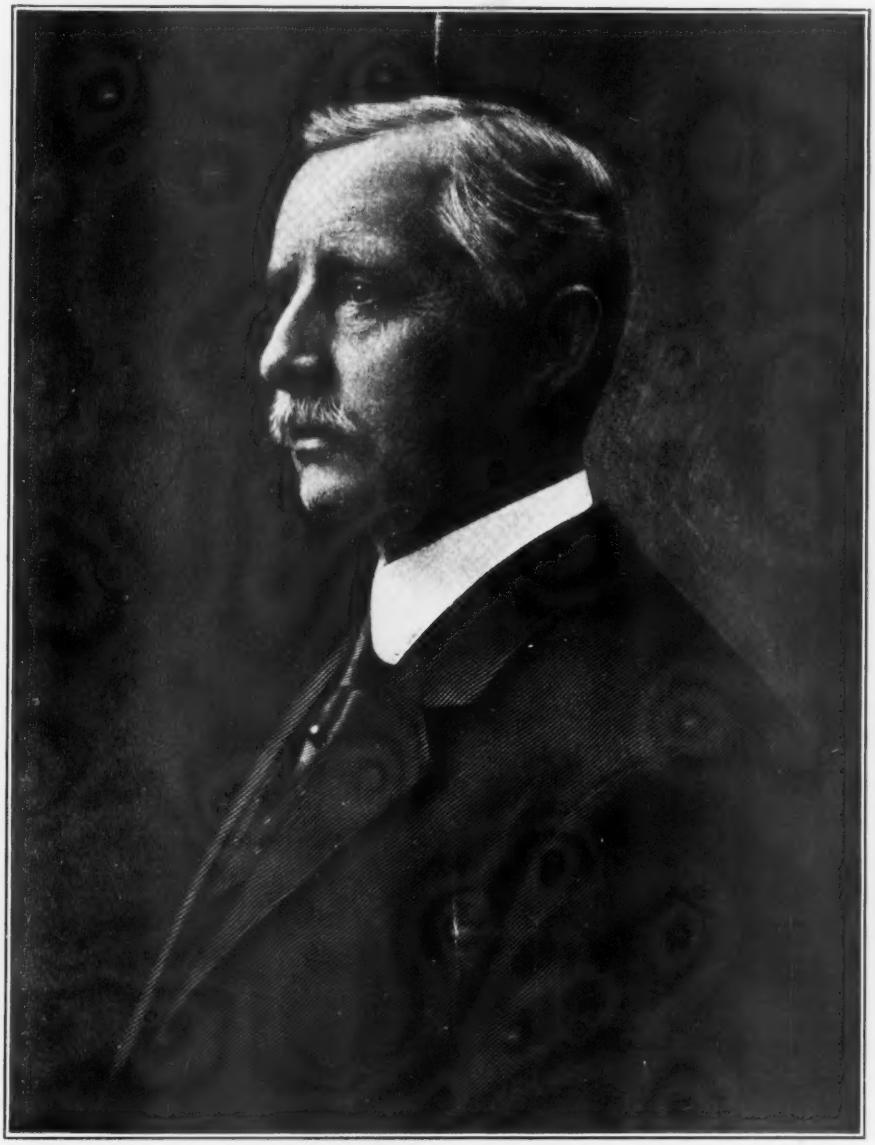
THE BULLETIN

OF THE

AMERICAN CERAMIC SOCIETY

Volume 15 JUNE, 1936 Number 6



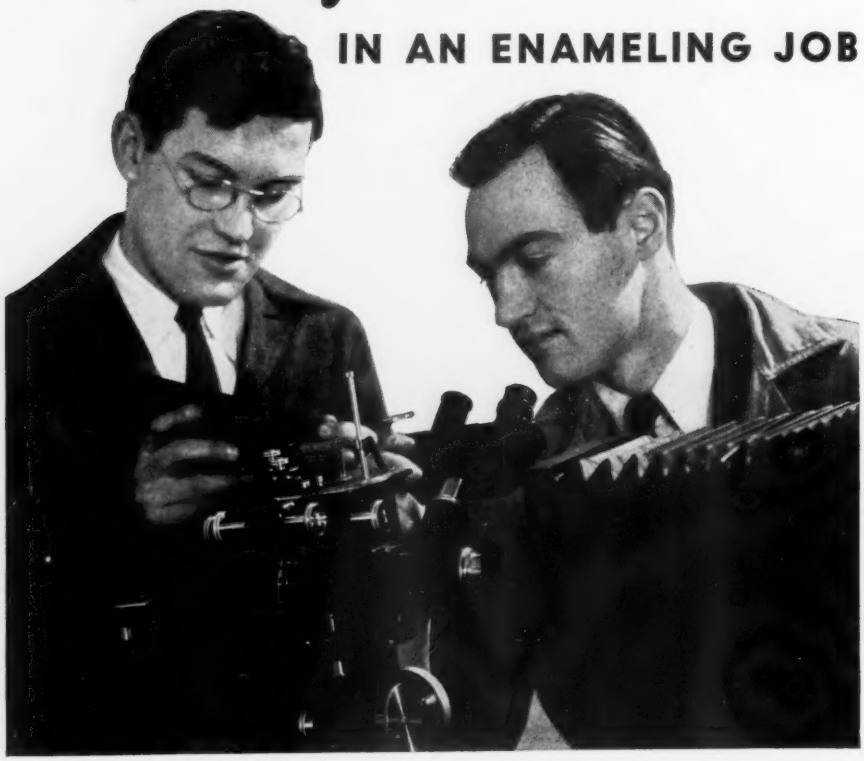
JAMES PASS

A successful and inventive potter, James Pass, thirty years ago advised American potters to secure aid from contemporary art and science as coöperatively applied to industry through the activities of the American Ceramic Society. For a biography of this Charter Member of the American Ceramic Society see page 220.

IT'S FUN

Finding the "Bugs"

IN AN ENAMELING JOB



PORCELAIN ENAMEL ON ARMCO

Some people may not get a kick out of it, but frankly we do . . . When one of Armco's many customers is being tormented by "bugs", whether in fabrication, preparation or enameling of the metal, we enjoy rolling up our sleeves and digging in. Incidentally, Armco men start with the best all-round enameling iron that you men out in enameling plants ever worked with. You might remember this the next time you order enameling iron. The American Rolling Mill Co., Executive Offices, 703 Curtis St., Middletown, O.

Armco Enameling Iron

THE BULLETIN OF THE AMERICAN CERAMIC SOCIETY

Volume 15 June, 1936 Number 6

CONTENTS

Activities of the Society 199

Proposed Revisions of The Constitution—W. Keith McAfee and Francis C. Flint ... 199
Proposed Constitution of The American Ceramic Society ... 200
Corporation Members Listed ... 203
Membership Status ... 205
New Members ... 205
Membership Workers' Record ... 205
Know Your Own ... 205
Photographs of Executive Offices ... 206–19
James Pass—Richard Pass ... 220
Officers of The American Ceramic Society 1936–1937 ... 223
Committee Appointments ... 223
Appointed Representatives ... 224
Structural Clay Products Research Foundation ... 224
International Congress on Glass Arranges Meeting Places ... 225
Necrology: George Casper Doering Lenth ... 225
Official Personnel of Divisions, 1936–1937 (Chart) ... 226
Wilber Stout Honored ... 227
Roster Changes During May ... 227
Local Section News: Baltimore-Washington, California, Chicago, Central Ohio, and Michigan-Northwestern Ohio Sections ... 228
Student Branch News: New York State College of Ceramics (photograph) ... 228, 241

Notes and News of Ceramists 229

Thirtieth Anniversary of Ceramic Education at University of Illinois ... 229
Leon V. Solon Awarded Binns Medal ... 230
American Refractories Institute ... 230
Ceramic School Notes: Rutgers University (photograph); Cleveland School of Art; and University of Illinois (photograph) ... 231–32
Glass Institute Formed ... 231

Communications—Ceramic History 233

Ceramic Art at Ohio State University—Department of Fine Arts ... 233
Stained Glass Creed—Lawrence Saint ... 238

Advertisers' Index ... 4

Buyers' Guide ... 5

Editorial and Advertising Offices: 2525 N. High St., Columbus, Ohio.
Publication Office: 20th & Northampton Sts., Easton, Pa.
Executive Office: 2525 N. High St., Columbus, Ohio.
Committee on Publications: J. D. Sullivan, *Chairman;* R. G. Cowan, T. A. Klinefelter, R. F. Sherwood, Ross C. Purdy

Entered as second-class matter at the post office at Easton, Pa., under the act of March 3, 1879. Published monthly.
Subscription $1.50 a year. Single numbers twenty-five cents
(Foreign and Canadian postage, 50c additional on subscriptions)
(Copyright 1936, American Ceramic Society, Inc.)

THE WORLD'S FINEST PEMCO

PORCELAIN ENAMELS
OXIDES • CLEANERS
OPACIFIERS
GLAZES and SPECIALTIES

THE PORCELAIN ENAMEL and MANUFACTURING CO.
5602 Eastern Avenue
Baltimore, Maryland, U. S. A.

Ceramic Kilns and Furnaces

Complete Equipment
Designed
Built
Operated

Our broad experience is at your service.

We represent the Ferro Enamel Corporation, Cleveland, Ohio, as sales agents for its complete and successful line of ceramic glazes.

ALLIED ENGINEERING COMPANY

4150 E. 56th STREET CLEVELAND, OHIO

(A SUBSIDIARY OF FERRO ENAMEL CORPORATION, CLEVELAND, O.)

CLAYS

English China and Ball

TALCS

for

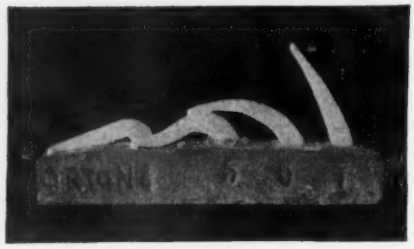
HEATING ELEMENTS
CERAMIC BODIES
SAGGER USES

Ceramic Specialties Include

Whiting : Paris White : Magnesite
Cornwall Stone : Barium Carbonate
Zinc Oxide : Enameling Clays : Etc.

HAMMILL & GILLESPIE, INC.
Importers since 1848
225 Broadway New York

ORTON STANDARD PYROMETRIC CONES



For Forty Years
The American Standard for
Control of Ceramic Heat Treatment

THE EDWARD ORTON, JR., CERAMIC FOUNDATION
George A. Bole, D.Sc., *Manager*

Laboratories & Office
1445 Summit Street—Columbus, Ohio

88-80 TIRES SAVE IN FOUR WAYS

DEVELOPED especially for use in the parts of grinding machinery that are exposed to severe abrasion, Bethlehem 88-80 opposes abrasive wear with an exceptional combination of properties. Castings of 88-80 not only have exceedingly high resistance to abrasion but this quality is uniform throughout the casting. Consequently, such wear as occurs is uniform across the face. And the entire thickness of the casting can be counted on for a full measure of grinding.

88-80 Muller tires bring savings in four distinct ways:

1. More material is ground per pound of steel bought.
2. The laborious job of replacing tires occurs less frequently.
3. As the surfaces do not wear concave if properly handled, a higher output per mill can be maintained.
4. The freedom from concave wearing makes for maximum economy of power consumption throughout the life of the tires.

On other types of grinding equipment similar advantages result from the use of grinding parts made of Bethlehem 88-80. The total of the savings is impressive.

Other Bethlehem Products for the Brick Industry

Bethlehem Abrasive-Resisting Plates—Experience has indicated that these steel plates have from three to five times the life of ordinary plates in chutes, hoppers, dump-car bottoms and similar applications in the handling of abrasive materials.

Bethlehem Tool Steel—Dry press and repress liners made of Bethlehem Tool Steel have exceptionally long life.

Beth-Cu-Loy Sheets—For long-lasting roofing and siding use Galvanized Sheets of low-cost, rust-defying Beth-Cu-Loy (copper-bearing steel). Use Beth-Cu-Loy Black Sheets for pallets.

Also—Bethlehem Light Rails, Steel Ties, and Track Equipment; Steel Bars and Kiln Bands; Boiler Tubes.

Bethlehem District Offices are located at Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Washington, Wilkes-Barre, York. *Export Distributor:* Bethlehem Steel Export Corporation, New York.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

GENERAL OFFICES: BETHLEHEM, PA.

ALPHABETICAL LIST OF ADVERTISERS

	Page
Allied Engineering Co.	2
American Potash & Chemical Corp.	10
American Rolling Mill Co.	Inside Front Cover
Bethlehem Steel Co.	3
Buyers' Guide	5
Carborundum Co.	9
Celo Mines, Inc.	241
Ceramic Color & Chemical Mfg. Co.	16
Chicago Vitreous Enamel Product Co.	16
Corhart Refractories Co.	12
Du Pont de Nemours, E. I., & Co.	11
Edgar Brothers Co.	14
Edgar Plastic Kaolin Co.	14
Electro Refractories & Alloys Corp.	20
Edward Orton, Jr., Ceramic Foundation	2
Hammill & Gillespie, Inc.	2
Hartford-Empire Co.	19
Hommel, O., Co., Inc.	18
Journal Society of Glass Technology	14
Lancaster Iron Works	17
McDanel Refractory Porcelain Co	10
Metal & Thermit Corp.	Outside Back Cover
Montgomery Porcelain Products Co.	10
Orton, Edward, Jr., Ceramic Foundation	2
Pacific Coast Borax Co.	8
Paper Makers Importing Co.	20
Pittsburgh Plate Glass Co.	14
Porcelain Enamel & Mfg. Co.	2
Potters Supply Co.	19
Professional Directory	18
Roessler & Hasslacher Chem. Dept.	11
Simplex Engineering Co.	13
Solvay Sales Corp.	19
Spinks, H. C., Clay Co.	Inside Back Cover
Tables Annuelles de Constantes	10
Vitro Mfg. Co.	16
Willson Products, Inc.	18
Wilson, H. W., Co.	8

YOU are a member of The American Ceramic Society

YOU know the value of your association with this Society

» BUT «

Do your ceramic associates know that they should also be members of this Society? WILL YOU TELL THEM JUST A FEW OF THE REASONS WHY THEY SHOULD BE MEMBERS? Although they will be receiving new ideas and new contacts through their membership, perhaps by coming into closer contacts with this ceramic associate (a prospective member of this Society) you too will receive some valuable information.

We need new members to make the Society grow as well as you need The Society that gives you the information and contacts that make your work grow.

American Ceramic Society

2525 North High St.

Columbus, Ohio

Abrasives
Carborundum Co. (*Carborundum and Aloxite*)
Chicago Vitreous Enamel Products Co.
The Hommel Co., O., Inc.
Norton Co. (*Alundum-Crystolon*)

Air Conditioning Systems
Simplex Engineering Co.

Aloxite (Refractory Products)
Carborundum Co.

Alumina (Hydrate and Calcined)
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.

Alumina (Fused) Brick and Tile
Electro Refractories & Alloys Corp.
The Vitro Mfg. Co.

Aluminum Oxide (Calcine)
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Aluminum Oxide (Fused)
Carborundum Co.
Electro Refractories & Alloys Corp.
Norton Co.
The Vitro Mfg. Co.

Alundum (Refractory Products)
Norton Co.

Ammonium Bicarbonate
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Solvay Sales Corp.

Ammonium Bifluoride
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Ammonium Carbonate
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.

Antimony Oxide
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Arches (Interlocking, Suspending, and Circular)
Simplex Engineering Co.

Automatic Brick Car Loaders
Lancaster Iron Works, Inc.

Ball Mills
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
McDanel Refractory Porcelain Co.
The Vitro Mfg. Co.

Ball Mills (Laboratory Type)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Denver Fire Clay Co.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Barium Carbonate
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Barytes
The Seaboard Feldspar Co.

Batch Systems
Lancaster Iron Works, Inc.
Simplex Engineering Co.

Batts
Carborundum Co. (*"Carbofrax Aloxite"*)
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co. (*Alundum-Crystolon*)

Bitstone
Consolidated Feldspar Corp.
Potters Supply Co.

Body Stains
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Blocks (Refractory)
Carborundum Co.
Chicago Vitreous Enamel Product Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.
The Vitro Mfg. Co.

Borax
American Potash & Chemical Co.
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pacific Coast Borax Co.
The Vitro Mfg. Co.

Borax Glass
American Potash and Chemical Corp.
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pacific Coast Borax Co.
The Vitro Mfg. Co.

Boric Acid (Anhydrous)
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
The Hommel Co., O., Inc.
Pacific Coast Borax Co.
The Vitro Mfg. Co.

Boric Acid (Crystal, Granular, or Powder)
American Potash & Chemical Corp.
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
The Hommel Co., O., Inc.
Pacific Coast Borax Co.
The Vitro Mfg. Co.

Boron Carbide
Norton Co.

Brick Machines (also Barrows, Molds)
Lancaster Iron Works, Inc.

Brick (Refractory)
Carborundum Co. (*"Carbofrax Aloxite"*)
Chicago Vitreous Enamel Product Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
The Vitro Mfg. Co.

Carbofrax (Refractory Products)
Carborundum Co.

Carbonates (Barium, Lead)
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Castings
Lancaster Iron Works, Inc.

Castings (Abrasive Resisting)
Bethlehem Steel Co.

Caustic Potash
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Solvay Sales Corp.

Caustic Soda
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
The Vitro Mfg. Co.

Cements
Carborundum Co.
Chicago Vitreous Enamel Product Co.
Corhart Refractories Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.

Ceramic Chemicals
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
The Porcelain Enamel and Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Chromium Oxide
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Clay (Ball)
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Potters Supply Co.
Spinks Clay Co., H. C.
The Vitro Mfg. Co.
United Clay Mines Corp.

Clay (Block)
Du Pont de Nemours, E. I., & Co., Inc. R. & H. Chemicals Dept.

Clay (China)
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
The Vitro Mfg. Co.
United Clay Mines Corp.

Clay—Cleaners, Feeders
Lancaster Iron Works, Inc.

Clay (Electrical, Porcelain)
Ceramic Color & Chemical Mfg. Co.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc,
Paper Makers Importing Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Clay (Enamel)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.,
Metal & Thermit Corp.
Paper Makers Importing Co.
The Porcelain Enamel & Mfg. Co.
Spinks Clay Co., H. C.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.
United Clay Mines Corp.

Clay (Fire)
Denver Fire Clay Co.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Paper Makers Importing Co.
Pittsburgh Plate Glass Co.
Potters Supply Co.

Clay (German Vallendar)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
The Porcelain Enamel & Mfg. Co.
The Vitro Mfg. Co.
United Clay Mines Corp.

Clay Miners
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Paper Makers Importing Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Clay (Potters)
Denver Fire Clay Co.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Clay (Process Equipment)
Lancaster Iron Works, Inc.

Clay (Sagger)
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Pittsburgh Plate Glass Co.
Potters Supply Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Clay (Wad)
Potters Supply Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Clay (Wall Tile)
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
Paper Makers Importing Co.
Spinks Clay Co., H. C.
United Clay Mines Corp.

Cleaners
The Porcelain Enamel and Mfg. Co.

Clocks (Gauge Board)
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.

Cobalt Oxide
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Porcelain Enamel and Mfg. Co.
The Vitro Mfg. Co.

Colors
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pittsburgh Plate Glass Co.
The Porcelain Enamel and Mfg. Co.
The Vitro Mfg. Co.

Cones
The Edward Orton, Jr., Ceramic Foundation

Conveying Equipment
Lancaster Iron Works, Inc.
Simplex Engineering Co.

Corhart
Corhart Refractories Co.

Cornwall Stone (Imported)
Consolidated Feldspar Corp.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.

Crucibles (Filter, Melting, Ignition)
Carborundum Co.
Denver Fire Clay Co.
Norton Co.
Pittsburgh Plate Glass Co.
Potters Supply Co.

Crushers (Clay)
Lancaster Iron Works, Inc.

Crystolon (Refractory Products)
Norton Co.

Cullet, Washing Plants, Incinerators, Crushers
Simplex Engineering Co.

Decorating Supplies
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pittsburgh Plate Glass Co.
The Vitro Mfg. Co.

Disintegrators
Lancaster Iron Works, Inc.

Dryer (Pipe Rack)
Lancaster Iron Works, Inc.

Drying Machinery
Lancaster Iron Works, Inc.
Simplex Engineering Co.

Electrocast Refractories
Corhart Refractories Co.

Enameling Equipment (Complete)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
Simplex Engineering Co.

Enameling Furnaces
Carborundum Co.
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Electro Refractories & Alloys Corp.
The Hommel Co., O., Inc.
Lancaster Iron Works, Inc.
Norton Co.

Enameling Iron (Sheet)
American Rolling Mill Co.
Bethlehem Steel Co.

Enameling Muffles
Bethlehem Steel Co.
Carborundum Co. (*Carbofrax*)
Chicago Vitreous Enamel Product Co.
Electro Refractories & Alloys Corp.
Norton Co. (*Alundum*)
Pittsburgh Plate Glass Co.
Simplex Engineering Co.

Enameling (Practical Service)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Enamels
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pittsburgh Plate Glass Co.
The Porcelain Enamel and Mfg. Co.
The Vitro Mfg. Co.

Enamel Oxide
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Enamels (Porcelain)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Equipment (Porcelain Enameling)
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The DeVilbiss Co.
The Hommel Co., O., Inc.

Exhaust Systems
The DeVilbiss Co.

Feldspar
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
The Porcelain Enamel and Mfg. Co.
The Seaboard Feldspar Co.
The Vitro Mfg. Co.

Fire Brick
Carborundum Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.

Fire Brick—Process Equipment
Lancaster Iron Works, Inc.

Fire Clay
Kentucky Clay Mining Co.
Spinks Clay Co., H. C.

Flint
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
The Porcelain Enamel and Mfg. Co.

Flint Pebbles
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Consolidated Feldspar Corp.
The Hommel Co., O., Inc.

Floors (Non-Slip)
Norton Co.

French Flint
Consolidated Feldspar Corp.
Paper Makers Importing Co.

Frit
Allied Engineering Co.
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Fuel Oil Systems and Control, Stokers
Bethlehem Steel Co.
Simplex Engineering Co.

Furnaces
Allied Engineering Co.
Carborundum Co. (*Carboradiant*)
Chicago Vitreous Enamel Product Co.
Denver Fire Clay Co.
The Hommel Co., O., Inc.
Simplex Engineering Co.

Glass Bending Ovens, Glass Decorating Machines
Simplex Engineering Co.

Glass Equipment
Hartford-Empire Co.
Lancaster Iron Works, Inc.

Glass Melting Pots (Open and Covered)
Pittsburgh Plate Glass Co.

Glass Melting Tanks and Furnaces
Pittsburgh Plate Glass Co.
Simplex Engineering Co.

Glass Thickness Gauge
Bausch & Lomb Optical Co.

Glaze and Body Spar
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
The Porcelain Enamel and Mfg. Co.

Glazes and Enamels
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. H. Chemicals Dept.
The Hommel Co., O., Inc.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Glaze Spar
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Paper Makers Importing Co.

Goggles
Willson Products, Inc.

Gold
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. H. & Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Dept.

Gold Decorations
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Co.

Granulators
Lancaster Iron Works, Inc.

Grinding Wheels
Carborundum Co. (*Carborundum and Aloxite*)
Chicago Vitreous Enamel Product Co.
Norton Co. (*Alundum-Crystolon*)

Hearths
Carborundum Co.
(*Carbofrax* heat treating)
Corhart Refractories Co.
Electro Refractories & Alloys Corp.
Norton Co. (*Crystolon*)

Hearths (Fused Al_2O_3, SiC)
Electro Refractories & Alloys Corp.

Hearths (High Aluminous Clay, Electrically Sintered Aluminum Oxide, Silicon Carbide)
Carborundum Co.
Norton Co.

Hose (Air and Fluid)
The DeVilbiss Co.

Iron (Enameling)
American Rolling Mill Co.
Bethlehem Steel Co.

Iron Oxide
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Porcelain Enamel and Mfg. Co.
The Vitro Mfg. Co.

Kaolin
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Edgar Brothers Co.
Edgar Plastic Kaolin Co.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
United Clay Mines Corp.

Kellog AA Refractories
Electro Refractories & Alloys Corp.

Kilns, China (Decorating)
Allied Engineering Co.
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
The Hommel Co., O., Inc.
Simplex Engineering Co.

Kiln Furniture (Silicon Carbide, Semi-Silicon Carbide)
Electro Refractories & Alloys Corp.

Kyanite
Celo Mines, Inc.

Kryolith
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Laboratory Ware
Norton Co.

Lehr Tile (High Aluminous Clay, Electrically Sintered Aluminum Oxide, Silicon Carbide)

Carborundum Co.
Electro Refractories & Alloys Corp.

Lehrs
Simplex Engineering Co.

Lehrs (Electric or Fuel Heated)
Simplex Engineering Co.

Lehr Loaders
Simplex Engineering Co.

Linings (Furnace Refractory, Block Refractory Plate, Brick and Tile)
Carborundum Co.
Chicago Vitreous Enamel Product Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.
The Vitro Mfg. Co.

Magnesia (Fused)
Electro Refractories & Alloys Corp.

Magnesia (Sintered, Calcined)
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Norton Co.
The Procelain Enamel and Mfg. Co.

Magnesite
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.

Manganese
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Manganese (Oxide)
Ceramic Color & Chemical Mfg. Co.
Corhart Refractories Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Masks (Breathing)
The DeVilbiss Co.
Willson Products, Inc.

Metals (Porcelain Enameling)
American Rolling Mill Co.
Bethlehem Steel Co.

Microscopes (Polarizing)
Bausch & Lomb Optical Co.

Minerals
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Mixers (Batch)
Lancaster Iron Works, Inc.

Mold Sanders
Lancaster Iron Works, Inc.

Muffles (Furnace)
Allied Engineering Co.
Carborundum Co. (*Carbofrax*)
Chicago Vitreous Enamel Product Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.
Simplex Engineering Co.

Muffles (Laboratory)
Electro Refractories & Alloys Corp.

Mullite (Refractories)
Electro Refractories & Alloys Corp.

Muriatic Acid
Denver Fire Clay Co.
The Hommel Co., O., Inc.

Nitrates (Cobalt, Sodium)
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Non-Gro Refractories
Electro Refractories & Alloys Corp.

Norbide (Norton Boron Carbide)
Norton Co.

Olivine
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Opacifiers
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
Metal & Thermit Corp.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Overglaze Colors
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Oxides
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
Metal & Thermit Corp.
Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Palladium Decorations
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Pins
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
Potters Supply Co.

Platinum Decorations
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.

Polariscopes
Bausch & Lomb Optical Co.
Simplex Engineering Co.

Porcelain Enameling Service (Practical)
American Rolling Mill Co.
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Porcelain Enamels
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Potash (Carbonate)
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Solvay Sales Corp.
The Vitro Mfg. Co.

Producer Glass Plants
Simplex Engineering Co.

Pug Mills
Lancaster Iron Works, Inc.

Pyrophyllite
The Seaboard Feldspar Co.

Pyrometer Tubes
Carborundum Co.
Electro Refractories & Alloys Corp.

Pyrometer Tubes (Refractory and Hard Porcelain)
Denver Fire Clay Co.
McDanel Refractory Porcelain Co.
Norton Co.

Pyrometric Cones
The Edward Orton, Jr., Ceramic Foundation

Raw Material Handling Equipment
Simplex Engineering Co.
Lancaster Iron Works, Inc.

Refractometers
Bausch & Lomb Optical Co.

Refractories
Carborundum Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.

Refractory Materials
Carborundum Co.
Chicago Vitreous Enamel Product Co.
Corhart Refractories Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.
Titanium Alloy Mfg. Co.

Represses (Automatic)
Lancaster Iron Works, Inc.

Respirators
Chicago Vitreous Enamel Product Co.
The DeVilbiss Co.
The Hommel Co., O., Inc.
Willson Products, Inc.

Rutile
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

Saggers
Carborundum Co.
Electro Refractories & Alloys Corp.
Norton Co.
Potters Supply Co.

Salt Cake
American Potash & Chemical Co.
The Hommel Co., O., Inc.

Sandblast Helmets
Willson Products, Inc.

Sand Grinder and Sifters
Lancaster Iron Works, Inc.

Saponin
The Hommel Co., O., Inc.

Selenite of Sodium
Drakenfeld & Co., B. F.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Selenium
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Sheets (Enameling Iron)
American Rolling Mill Co.
Bethlehem Steel Co.

Silica (Fused)
Electro Refractories & Alloys Corp.
The Hommel Co., O., Inc.

Silicate of Soda
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
The Hommel Co., O., Inc.

Silicon Carbide
Carborundum Co.
Electro Refractories & Alloys Corp.
Norton Co.

Silicon Carbide Firesand
Carborundum Co.

Sillimanite Refractories
Electro Refractories & Alloys Corp.

Sillimanite (Synthetic)
Pittsburgh Plate Glass Co.

Slabs (Furnace)
Carborundum Co.
Electro Refractories & Alloys Corp.
Norton Co.
Ingram-Richardson Mfg. Co. of Indiana, Inc.
Pittsburgh Plate Glass Co.

Soda Ash
American Potash and Chemical Corp.
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Pittsburgh Plate Glass Co.
Solvay Sales Corp.
The Vitro Mfg. Co.

Sodium Antimonate
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
The Vitro Mfg. Co.

Sodium Fluoride
Ceramic Color & Chemical Mfg. Co.
Denver Fire Clay Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.

Sodium Silica Fluoride
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.

Soot Blowers
Simplex Engineering Co.

Special Machines
Simplex Engineering Co.
Spar
Ceramic Color & Chemical Mfg. Co.
Consolidated Feldspar Corp.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Spray Booths
The DeVilbiss Co.
Spraying Equipment
The DeVilbiss Co.
Spurs
Potters Supply Co.
Stacks
Lancaster Iron Works, Inc.
Steel Plate Construction
Bethlehem Steel Co.
Lancaster Iron Works, Inc.
Stilts
Potters Supply Co.
Sulfuric Acid
Denver Fire Clay Co.
The Hommel Co., O., Inc.
Talc
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Tanks
Simplex Engineering Co.
Tank Blocks
Corhart Refractories Co.
Pittsburgh Plate Glass Co.
Tanks (Pickle)
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
Tanks for Raw Material Steel or Concrete
Bethlehem Steel Co.
Lancaster Iron Works, Inc.
Tile (Floor)
Norton Co.
Tile (Muffle)
Carborundum Co.
Electro Refractories & Alloys Corp.
Norton Co.
Tile (Refractory)
Carborundum Co. (*Carbofrax*)
Chicago Vitreous Enamel Product Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
Norton Co.
Pittsburgh Plate Glass Co.
Tile (Wall)
Denver Fire Clay Co.
Tin Oxide
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
The Vitro Mfg. Co.
Titanium
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
The Hommel Co., O., Inc.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.
Titanium Oxide
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.
Trucks
Lancaster Iron Works, Inc.
Tubes (Insulating)
Carborundum Co.
McDanel Refractory Porcelain Co.
Norton Co.
Tubes (Pyrometer)
Carborundum Co.
Denver Fire Clay Co.
Electro Refractories & Alloys Corp.
McDanel Refractory Porcelain Co.
Norton Co.
Pittsburgh Plate Glass Co.
Uronium Oxide (Yellow-Orange-Black)
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Water Softening Plants
Simplex Engineering Co.
Wet Enamel
Ceramic Color & Chemical Mfg. Co.
Chicago Vitreous Enamel Product Co.
The Hommel Co., O., Inc.
The Porcelain Enamel & Mfg. Co.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.
Whiting
Ceramic Color & Chemical Mfg. Co.
Drakenfeld & Co., B. F.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
Hammill & Gillespie, Inc.
The Hommel Co., O., Inc.
Paper Makers Importing Co.
Winding Drums
Lancaster Iron Works, Inc.
Zinc Oxide
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
The Vitro Mfg. Co.
Zirconia
Ceramic Color & Chemical Mfg. Co.
Du Pont de Nemours, E. I., & Co., Inc., R. & H. Chemicals Dept.
The Hommel Co., O., Inc.
Metal & Thermit Corp.
Titanium Alloy Mfg. Co.
The Vitro Mfg. Co.

BORAX *Guaranteed 99½%–100% Pure* BORIC ACID

Select the Brand which has back of it years of *successful use* by experienced Ceramists

Pacific Coast Borax Co., New York

Chicago **Los Angeles**

BACK NUMBERS
OF
JOURNAL OF AMERICAN CERAMIC SOCIETY
AND ALL IMPORTANT MAGAZINES FROM THE WORLD OVER

We furnish single copies, volumes and sets or photostat reproductions of specific sections, reasonably and promptly

WRITE, PHONE OR WIRE PERIODICALS DEPARTMENT

THE H. W. WILSON COMPANY 950 University Avenue, New York

THE LIFE OF PREVIOUSLY USED REFRACTORY WAS 6 MONTHS

THE LIFE OF "CARBOFRAX" INSTALLATION IS 2 YEARS

THIS "Carbofrax" muffle and supports were installed in a porcelain enameling furnace two years ago and are in fit condition today.

For two years the "Carbofrax" equipped furnace has been producing highest quality of ware at minimum costs. The refractories used previously had a useful life of but six months.

"Carbofrax," the Carborundum Brand Silicon Carbide Refractory, is one of the great essentials in the maximum production of enamel ware at a low cost per unit.

"CARBOFRAX"

REG. U. S. PAT. OFF.

The Carborundum Brand Silicon Carbide Refractory

HEARTHS - TILE - MUFFLES
BRICK - CEMENTS

A Product of

THE CARBORUNDUM COMPANY

Refractory Division, Perth Amboy, N. J.

District Sales Branches: Boston, Chicago, Cleveland, Detroit, Philadelphia, Pittsburgh. Agents: L. F. McConnell, Birmingham, Ala.; Christy Firebrick Company, St. Louis; Harrison & Company, Salt Lake City, Utah; Pacific Abrasive Supply Co., Los Angeles, San Francisco, Seattle; Denver Fireclay Co., El Paso, Texas; Williams and Wilson, Ltd., Montreal-Toronto, Canada. (Carborundum and Carbofrax are registered trade-marks of The Carborundum Company.)

McDANEL REFRACTORY PORCELAIN COMPANY

Manufacturers of

PORCELAIN TUBES PROTECTION TUBES
INSULATING TUBING and BEADS

BEAVER FALLS PENNSYLVANIA

THREE ELEPHANT

REG. U.S. PAT. OFF. REG. U.S. PAT. OFF.

AND BORIC ACID

GUARANTEED OVER 99.5% PURE

AMERICAN POTASH & CHEMICAL CORPORATION

70 Pine Street, New York

MONTGOMERY PORCELAIN PRODUCTS CO.

Specializing in

Primary Protection Tubes for all makes of Pyrometers
"Corundum" "Mullite" "Silicon Carbide" "Refractory Porcelain"

FRANKLIN OHIO

Numerical Documentation

THE ANNUAL TABLES OF CONSTANTS (A.T.C.)

AND NUMERICAL DATA

Chemical, Physical, Biological, and Technological

collect, classify, and publish, since 1910, everything in Pure and Applied Natural Sciences capable of being expressed by a number

(For the period 1910–1929) the **A.T.C.** *complete and*

(since 1928) *continue* the International Critical Tables (I.C.T.)

The **A.T.C.** are absolutely necessary to all scientists.

They represent

the only one complete documentation—the most inexpensive—the easiest to consult owing to an *Index* systematically arranged which enables one to locate *at once* the data required.

For any information—any specimen—any volume on free examination

Apply immediately to

Canada and U.S.A.
The McGraw-Hill Book Company, Inc.
370 Seventh Avenue
New York, N. Y.

Other Countries
M. C. MARIE
9, rue de Bagneux
Paris VI° France

Volumes published: 1st Series—I to V—1910–1922 (5382 pages) and index (382 pages)
2nd " VI to IX—1923–1929 (7884 pages) and Index to Vol. IX (124 pages)

Specimens: Reprints of the following sections are sent free of charge: Spectroscopy—Electricity, Magnetism, and Electrochemistry—Radioactivity—Crystallography and Mineralogy—Biology—Engineering and Metallurgy — Colloids — Wireless — Photography — Geophysics — Combustible Gaseous Mixtures, Powders, and Explosives.

English versions: Beginning with Volume VII, all explanations to the tables are given both in English and French.

DU PONT
REG. U.S. PAT. OFF.

DECORATIONS AND COLORS PUT SALES POWER INTO YOUR PRODUCTS

For Pottery, Glassware and Enamel Ware . . .

Decoration is Sales Power, creates sales. Rich colors and decorations tastefully applied put beauty and individuality into the design . . . increase the consumer acceptance or sales value.

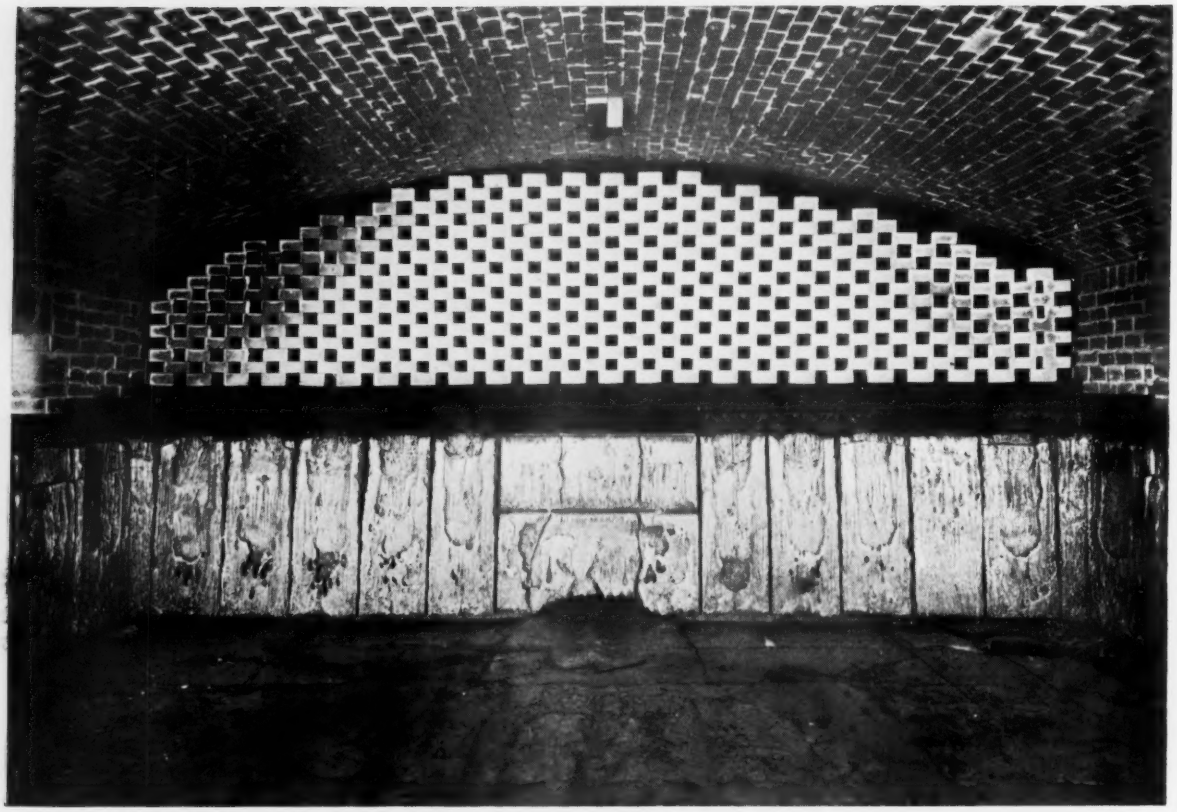
Du Pont offers *Sales Power* colors and decorations — a complete line of pre-tested materials — standard and special-match colors for ceramics and glassware; precious metal decorations; overglazes and underglazes, color oxides and other ceramic materials.

A line from you will bring complete details

DU PONT

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & CO., INC.
WILMINGTON · DELAWARE

District Sales Offices:
Baltimore Boston Charlotte Chicago Cleveland
Kansas City Newark New York Philadelphia
Pittsburgh San Francisco
Ceramic Section, Perth Amboy, N. J.



169% LONGER LIFE with CORHART!

THE photograph above shows a Corhart furnace after 875 days of continuous operation . . . Allowing for Sundays and holidays, the actual production time of this tank was 735 days, during which it produced 39,116 tons of glass at the feeders.

A good performance? Well, "let's look at the record." On its previous run, and operating as an all-clay tank, this furnace had an over-all life of but 325 days, with only 280 days in actual production. Glass produced during this period amounted approximately to only 12,325 tons at the feeders.

Yet this 169% increase in life and this 217% increase in tonnage were achieved at an additional repair cost of approximately 30% spent for Corhart Electrocast!

Because of Corhart's excess cost over lower-quality blocks, a few glass producers still consider Corhart a luxury. But it is a significant fact that such actual users as the owners of this furnace consider Corhart so important to economical production that *they re-ordered their second Corhart repair several months before the first one had been let out.*

Without being boastful, and with all sincerity, we feel that an impartial analysis of Electrocast will bring you to the same sort of conclusion.

Corhart Refractories Co., Incorporated, 16th and Lee Sts., Louisville, Ky. *In Europe:* L'Electro Refractaire, Paris. *In Japan:* Asahi Glass Co., Tokio.

QUALITY ECONOMY ENDURANCE

CORHART ELECTROCAST REFRACTORIES

THE BULLETIN
OF THE AMERICAN CERAMIC SOCIETY

A Monthly Publication Devoted to Proceedings of the Society and Promotion of Coöperative Research of Technical, Scientific, and Art Questions

VOLUME 15 **JUNE, 1936** **NUMBER 6**

ACTIVITIES OF THE SOCIETY

THE PROPOSED REVISION OF THE CONSTITUTION

The American Ceramic Society has grown so large and complex that more and more of its work must be handled by the committee method. Those responsible for the management of the affairs of the Society the last few years have recognized this fact and have been studying ways and means of strengthening our organization. This study has occasioned many references to our present Constitution for guidance.

The present Constitution was originally drawn up when the Society was smaller and less complex. It has been amended many times in an attempt to keep it in step with our expanding activities. The Board of Trustees has finally come to the conclusion that the present document is not very satisfactory from a business-management point of view. There is too much detail contained in it with respect to some phases of our activities and an absence of clear statement of policy with respect to others. We have been advised by counsel that in many respects it does not conform to the laws of the State of Ohio under which we were incorporated in 1905.

President McKinley appointed a Special Committee in December, 1935, to study this entire question. This Committee investigated the Constitution and By-Laws of a number of other large technical societies and discovered that they all followed approximately the same pattern. The Constitution in each case expressed the general policy of the organization, defined the qualifications for the various grades of membership, and, in addition to meeting other legal requirements, authorized the governing body to adopt By-Laws covering matters of detail. By-Laws could be adopted or amended by the governing body after a period of notice and by more than a majority vote of the said body. In some cases Rules were provided for. These could be changed by the governing body at any time by a majority vote of those present and hence were sufficiently flexible to meet changing conditions. A study of the Rules of those organizations having them disclosed the fact that they were written expressions of current policies of the organizations and were no doubt useful in that the current policies were always published to the membership.

The Committee accepted this general pattern as workable because it had been so uniformly adopted by other technical societies. Our present Constitution and so-called By-Laws were analyzed from this point of view. We found that much of the material should be delegated to By-Laws and some of it to Rules. David McKinley, a Cleveland attorney, very kindly helped us with the legal aspects of the problem and made the first draft of a proposed new Constitution. The Committee then took this draft and worked into it the provisions of the present Constitution under the following instructions of the Board of Trustees. There was to be no basic change in the present set-up except to eliminate those provisions which are now obsolete, such as the distinction between Associate and Active Membership, Trade Association Membership, and other details. We were to make whatever changes were necessary to conform to the laws of Ohio and to eliminate those parts of the Constitution which properly belong in the By-Laws or Rules. We were authorized to make one change with regard to the method of amending the Constitution, in order to provide the machinery

necessary to notify the membership of any proposed amendments and to give it an opportunity to discuss and alter the proposed amendments at the annual business meeting. If you will compare the proposed revision of the Constitution with the present one, you will find much material missing. This will be incorporated either in the By-Laws or in the Rules. Both the By-Laws and the Rules will be published in *The Bulletin* as they are adopted or revised from time to time to meet changing conditions in the Society.

The proposed revision has received the approval of the Board of Trustees and was presented at the annual business meeting at Columbus, Ohio, March, 1936. Under instructions of this meeting, it has been referred to the Rules Committee and is published herewith in conformity with Article XIII of the present Constitution. It is the result of more than a year's discussion by the Board of Trustees and much study by the Special Committee. It has had final approval of Attorney McKinley. We commend it to your earnest consideration before voting approval or disapproval.

W. KEITH MCAFEE, *Committee Chairman*
FRANCIS C. FLINT, *President*

PROPOSED CONSTITUTION OF THE AMERICAN CERAMIC SOCIETY

(Incorporated under the Laws of Ohio, 1905)

Article I—Name

The official title of this Corporation shall be THE AMERICAN CERAMIC SOCIETY, with official office located in the City of Columbus, County of Franklin, and State of Ohio.

Article II—Purpose

It shall be the purpose of this corporation, hereinafter referred to as THE SOCIETY, to promote the ceramic arts and sciences by holding meetings for the reading and discussion of papers, by the publication of literature, and by such other activities as are authorized by the Charter of this corporation.

Article III—Membership

(1) The membership of THE SOCIETY shall consist of the following classes:

(*a*) Honorary Members shall be persons of professional eminence who, because of their achievements in the ceramic arts or sciences, are elected to such membership by the Board of Trustees as provided in the By-Laws. Their number shall not exceed ten (10) at any one time.

(*b*) Ex-Officio Honorary Members shall be officers of other associations or societies whom the Board of Trustees shall designate as such members as provided in the By-Laws. They shall hold such membership only during their incumbency in their respective organizations.

(*c*) Fellows shall be persons of at least thirty years of age who have been Members at least five years and who shall be entitled to elevation to the grade of Fellow by reason of outstanding contributions to the ceramic arts or sciences. Nomination to the grade of Fellow shall be by seven or more Members, of whom four or more shall be members of the Division with which the nominee is affiliated. Qualification for, and election to, such grade of Fellow shall, subject to ratification by the Board of Trustees, be determined by a Fellowship Board of not less than nine (9) members, consisting of previously elected Fellows representing each Division of THE SOCIETY who have been named as members of said Board by the Dean of Fellows. If a candidate shall receive three (3) or more negative votes of the Fellowship Board, he shall fail of election. Persons elected to Fellowship shall be entitled to use the title "Fellow of The American Ceramic Society," or the abbreviation "F.A.Cer.S.," but shall have no powers, rights or duties different from those common to Members, except as provided in Article VIII hereinafter.

(*d*) Members shall be persons interested in the ceramic or allied arts and sciences elected as provided in the By-Laws.

(*e*) Corporation Members shall be persons, firms or corporations who promote the objects of THE SOCIETY by the payment of annual dues as provided in the By-Laws. Such Corporation Members shall be entitled to designate a representative to be known as Voter of a Corporation Member.

(*f*) Student Members shall be university and college students while enrolled in their respective institutions. They may retain such membership until the end of the year following that in which they cease to be enrolled, whereupon they will automatically be promoted to Membership.

(2) The Board of Trustees may declare any Fellow, Member, or Corporation Member to be a Life-Member in the same class of membership, in the manner and upon the conditions provided in the By-Laws.

(3) The following classes of members shall be entitled to vote on matters pertaining to THE SOCIETY as a whole or its regularly constituted Divisions: Fellow, Member, Voter of Corporation Member, and Life-Member of these classifications.

(4) The following classes of members shall be entitled to hold office: Fellow, Member, and Life-Member of either classification.

Article IV—Board of Trustees

(1) The management of the affairs of THE SOCIETY shall be vested in a Board of Trustees, consisting of the President of THE SOCIETY, the Vice-President, the Treasurer, the two most recent living past Presidents, and a representative of each Division of THE SOCIETY.

(2) The term of office of the President, Vice-President, and Treasurer shall be one year, to wit: from the close of one Annual Meeting to the close of the next succeeding Annual Meeting, or until their respective successors have been elected and duly qualified. The term of office of the Trustee representatives of each Division shall be three years, to wit: from the close of one Annual Meeting to the close of the third succeeding Annual Meeting, or until their respective successors have been elected and duly qualified.

(3) To facilitate conduct of the affairs of THE SOCIETY, the Board of Trustees shall at each Annual Meeting elect four (4) of its members to comprise, in company with the President of THE SOCIETY, an Executive Committee which shall have such powers as are delegated to it by the Board of Trustees, to be exercised by such committee in the period between meetings of the Board of Trustees. The President of THE SOCIETY shall be chairman of the Executive Committee and shall call meetings of such committee at least quarterly.

(4) The Board of Trustees shall have sole and exclusive power:

(*a*) To incur debt in the name of THE SOCIETY.

(*b*) To enter into contracts binding upon THE SOCIETY.

(*c*) To determine questions of jurisdiction arising between the various Divisions, Fellows, Local Sections, Student Branches, Committees, and other subdivisions and members of THE SOCIETY.

(*d*) To determine the dues and fees of members of THE SOCIETY, except that Honorary Members and Ex-Officio Honorary Members shall at all times be exempt from fees and dues.

(*e*) To provide for the publication of *The Journal of the American Ceramic Society, Ceramic Abstracts, The Bulletin,* and such other publications as the Board of Trustees may authorize.

(*f*) To employ at suitable compensation an Editor and other personnel.

(*g*) To determine the subscription price or sales price of the publications of THE SOCIETY.

(*h*) To expel members, as more fully set forth in Section XII hereinafter.

Provided, however, that for the purpose of facilitating the conduct of the affairs of THE SOCIETY in the period between meetings of the Board of Trustees, the Board may delegate to the Executive Committee such of its powers, and for such periods of time, as the Board may deem necessary.

Article V—Meetings

(1) An annual business meeting of THE SOCIETY shall be held at such time and place as the Trustees shall determine. Notice of said meeting shall be given the membership either in writing or by publication in any regular publication of THE SOCIETY at least sixty (60) days prior thereto.

(2) The number of members constituting a quorum at any meeting of THE SOCIETY shall be as provided in the By-Laws.

Article VI—Officers

(1) The President shall have general supervision of the affairs of THE SOCIETY, subject to the control and direction of the Board of Trustees. He shall act as chairman of the Board of Trustees. He shall countersign checks drawn by the Treasurer, provided such checks are known by him to be proper and duly authorized by the Board of Trustees.

(2) The Vice-President shall preside at all meetings in the absence of the President, and shall succeed to the powers and duties of the President in the event of the refusal or incapacity of the President to act.

(3) The Board of Trustees shall appoint a General Secretary to serve for a term of two years. It shall be the duty of the General Secretary to maintain accurate books of account of the affairs of THE SOCIETY, and to conduct and keep full record of the minutes, correspondence, and other official records of THE SOCIETY. He shall present such financial statements to the Board of Trustees, submit to such audits, and perform such other duties as the Board may require. He shall furnish THE SOCIETY with a bond of such amount as the Board of Trustees may require, such bond to be conditioned upon the faithful performance of his duties. His salary shall be fixed by the Board of Trustees.

(4) The Treasurer shall collect all moneys due THE SOCIETY and shall deposit the same, in the name of THE SOCIETY, in a national bank or banks designated by the Board of Trustees. He shall draw such checks as are known by him to be proper and duly authorized by the Board of Trustees. He shall invest and reinvest the funds of THE SOCIETY as ordered by the Board of Trustees. He shall present such financial statements to the Board of Trustees, submit to such audits, and perform such other duties as the Board may require. He shall furnish THE SOCIETY with a bond of such amount as the Board of Trustees may require, such bond to be conditioned upon the faithful performance of his duties.

(5) In the event of the refusal to act, or incapacity to act, of either the Vice-President, or the Secretary, or the Treasurer, or in the event that the Vice-President shall succeed the President, the Board of Trustees shall appoint a successor for the unexpired term of such officer.

Article VII—Nominations and Elections

(1) The membership of THE SOCIETY shall elect annually an Executive Nominating Committee, whose duty shall, in the manner provided in the By-Laws, be to

propose candidates for the executive offices to be filled at each annual election.

(2) Additional nominating committees having the same powers may be constituted by the membership of THE SOCIETY, in the manner provided in the By-Laws.

(3) The election of officers and such Trustees as are to be elected shall be held annually as provided in the By-Laws.

(4) Each year the members of those Divisions of THE SOCIETY whose Trustees' triennial terms expire at the forthcoming Annual Meeting shall, by plurality written vote more than thirty (30) days before the opening date of said Annual Meeting, elect a representative to the Board of Trustees for the succeeding triennial period, in the manner provided in the By-Laws.

(5) In the event of the refusal to act, or incapacity to act, of a Trustee representative of a Division, the members of such Division shall, by plurality written vote, elect a successor for the unexpired term of such Trustee representative, in the manner provided in the By-Laws.

Article VIII—Fellows

(1) The affairs of the Fellows shall be managed by a Dean, Associate Dean, and Secretary-Treasurer. The nomination and election of the officers of the Fellows shall be in accordance with the rules of the Fellows provided for in Section two (2) of this Article.

(2) The Fellows shall have power to make such rules, elect such officers, and conduct such business as they may deem proper, subject, however, to the Constitution and By-Laws of THE SOCIETY.

(3) At each Annual Meeting of THE SOCIETY there shall be held at least one (1) meeting of the Fellows.

(4) The amount of money by which Fellowship dues exceed the dues of Members shall be set aside by the Board of Trustees of THE SOCIETY in a special fund which shall be used only as ordered by the Fellows.

Article IX—Divisions

(1) Divisions of THE SOCIETY shall be such groups of members as the Board of Trustees may authorize for the purpose of stimulating the growth and activities of THE SOCIETY in particular divisions or branches of the arts or sciences of ceramics.

(2) In order to qualify to vote for Trustee representative of a Division or for Division officers, each voting member of THE SOCIETY shall enroll in one particular Division. With the exception of the right to vote, members of THE SOCIETY shall be accorded equal privileges by all Divisions.

(3) The affairs of a Division shall be managed by a Chairman, Secretary, and such other officers as the Division may deem necessary. The Division officers shall be elected for a term of one year, to wit: from the close of one Annual Meeting to the close of the next Annual Meeting, or until their successors are elected and duly qualified. They shall be elected by the voting members of THE SOCIETY enrolled in the Division, and the procedure of nomination and election shall be in accordance with the Division rules provided for in Section four (4) of this Article.

(4) Each Division shall have power to make such rules, elect such officers, and conduct such business as it may deem proper, subject, however, to the Constitution and By-Laws of THE SOCIETY.

Article X—Local Sections and Student Branches

(1) The Board of Trustees may authorize the organization of Local Sections as provided in the By-Laws.

(2) The Board of Trustees may authorize the organization of Student Branches as provided in the By-Laws.

Article XI—Committees

(1) The Board of Trustees shall appoint such committees and committee chairmen as the By-Laws may currently require. The sole and exclusive power to govern such committees and their chairmen shall rest in the Board.

(2) Each Division shall appoint such members of general committees of THE SOCIETY as the By-Laws of THE SOCIETY may currently require, the manner of such appointment to be as provided in the Division Rules of each Division.

Article XII—Expulsions

(1) In the event of the filing of written charges against any member of THE SOCIETY, and such charges be signed by five or more of the voting members of THE SOCIETY, the President of THE SOCIETY shall appoint a special committee of Fellows, including a Fellow from each Division, which special committee shall provide the member charged with a detailed statement of the charges, arrange a full and impartial hearing of such charges, and submit its findings and recommendations, in writing, to the Board of Trustees, for such action as the Board may see fit.

(2) In the event that the Board of Trustees shall, upon consideration of the findings and recommendations of the Fellows, declare the member to be expelled from THE SOCIETY, any moneys paid THE SOCIETY by way of endowment fees or dues shall thereupon become forfeit to THE SOCIETY.

Article XIII—By-Laws

At any regular meeting of the Board of Trustees, the Trustees may, by a two-thirds vote of the Trustees present, adopt such By-Laws as are not inconsistent with this Constitution. Provided, however, that prior to such adoption, each such By-Law shall either be submitted in writing at a previous meeting of the Board of Trustees or shall be mailed by the General Secretary to each Trustee at least thirty (30) days before the meeting at which action is to be taken. A By-Law shall take effect immediately upon its adoption by the Board of Trustees and shall be published to the membership in a next succeeding regular publication of THE SOCIETY.

Article XIV—Amendments

(1) Any voting member may propose amendments to this Constitution by filing a written petition with the

Secretary, who shall immediately transmit it to each member of the Board of Trustees with letter ballot. If either a majority of the Board of Trustees votes to submit the said proposed amendment to the membership of THE SOCIETY, or if the original petition is signed by at least seventy-five (75) voting members, the General Secretary shall publish it in a regular publication of THE SOCIETY prior to the meeting at which the proposed amendment is to be considered.

(2) Opportunity shall be given for discussion of the proposed amendment at the Annual Meeting next succeeding its publication and said proposed amendment may be modified by a majority vote, if a quorum be present as provided in the By-Laws.

(3) The members attendant at such Annual Meeting shall, by majority vote, determine whether the proposed amendment shall be submitted to THE SOCIETY for formal adoption. In the event of an affirmative vote thereon, the full text of the proposed amendment shall thereupon be published in an early issue of a regular publication of THE SOCIETY, and within thirty (30) days thereafter the General Secretary shall mail to all voters printed ballots incorporating or summarizing said amendment.

(4) The ballots shall be tabulated thirty (30) days after the date of mailing, and in the event that two-thirds of the votes cast shall favor said amendment, it shall at once become effective.

ON THE UP AND UP BUT OH, HOW SLOWLY!

Progress, if for you, must be by you. Each of us is our own limitation except as we obtain coöperation of others, and even this is a self-limiting factor.

Here is a list of corporations who have paid a minimum of $25.00 dues in support of this Society. In return they get publications that are worth more than $25.00, and also the valuable coöperation of the leading ceramic corporations.

Will each personal member secure a new Corporation Member? Do this as your part in keeping up with the nonceramic competition which by research and education is crowding and satisfying markets that once were exclusively supplied by ceramic products.

ABBÉ ENGINEERING COMPANY, New York, N. Y.
A C SPARK PLUG COMPANY, Flint, Mich.
AKRON PORCELAIN COMPANY, Akron, Ohio
AMERICAN GAS ASSOCIATION, New York, N. Y.
AMERICAN LAVA CORPORATION, Chattanooga, Tenn.
AMERICAN POTASH & CHEMICAL CORPORATION, New York, N. Y.
AMERICAN REFRACTORIES INSTITUTE, Pittsburgh, Pa.
AMERICAN ROLLING MILL COMPANY, Middletown, Ohio
AMERICAN SHEET & TIN PLATE COMPANY, Pittsburgh, Pa.
AMERICAN STOVE COMPANY, St. Louis, Mo.
AMSLER-MORTON COMPANY, Pittsburgh, Pa.
ATLANTIC TERRA COTTA COMPANY, Perth Amboy, N. J.
BABCOCK & WILCOX COMPANY, New York, N. Y.
BALL BROTHERS COMPANY, Muncie, Ind.
BALTIMORE ENAMEL & NOVELTY COMPANY, Baltimore, Md.
BAUSCH & LOMB OPTICAL COMPANY, Rochester, N. Y.
BINGHAMTON BRICK COMPANY, Binghamton, N. Y.
BLYTHE COLOUR WORKS, LIMITED, Cresswell, Stoke-on-Trent, England
BONNOT COMPANY, Canton, Ohio
BUCK GLASS COMPANY, Baltimore, Md.
BUFFALO, NIAGARA & EASTERN POWER CORPORATION, Buffalo, N. Y.
BUFFALO POTTERY COMPANY, Buffalo, N. Y.
CANTON STAMPING & ENAMELING COMPANY, Canton, Ohio
CARBORUNDUM COMPANY, Niagara Falls, N. Y.
CARR-LOWREY GLASS COMPANY, Baltimore, Md.
CELO MINES, INCORPORATED, Burnsville, N. C.
CENTURY VITREOUS ENAMEL COMPANY, Chicago, Ill.
CERAMIC COLOR & CHEMICAL MANUFACTURING COMPANY, New Brighton, Pa.
CERTAIN-TEED PRODUCTS CORPORATION, Buffalo, N. Y.
CHAMPION SPARK PLUG COMPANY, Detroit, Mich.
CHICAGO HARDWARE FOUNDRY COMPANY, North Chicago, Ill.
CHICAGO POTTERY COMPANY, Chicago, Ill.
N. CLARKE & SONS, San Francisco, Calif.
CLAY PRODUCTS ASSOCIATION, Chicago, Ill.
CLAY PRODUCTS COMPANY, INC., OF INDIANA, Brazil, Ind.
COLUMBIAN ENAMELING & STAMPING COMPANY, Terre Haute, Ind.
COORS PORCELAIN COMPANY, Golden, Colo.
CORHART REFRACTORIES COMPANY, INC., Louisville, Ky.
CORNING GLASS WORKS, Corning, N. Y.
CORTLAND GRINDING WHEELS COMPANY, Chester, Mass.
CRANE ENAMELWARE COMPANY, Chattanooga, Tenn.
CROOKSVILLE CHINA COMPANY, Crooksville, Ohio
CROSSMAN COMPANY, South Amboy, N. J.
CROWN POTTERIES COMPANY, Evansville, Ind.
DENVER SEWER PIPE & CLAY COMPANY, Denver, Colo.
DETROIT ELECTRIC FURNACE COMPANY, Detroit, Mich.
DEVILBISS MANUFACTURING COMPANY, Toledo, Ohio
JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
B. F. DRAKENFELD & COMPANY, New York, N. Y.
E. I. DU PONT DE NEMOURS & COMPANY, R. & H. Chemical Dept., Wilmington, Del.
EDGAR PLASTIC KAOLIN COMPANY, Metuchen, N. J.
ELECTRO REFRACTORIES & ALLOYS CORPORATION, Buffalo, N. Y.
EMPIRE SHEET & TIN PLATE COMPANY, Mansfield, Ohio
CHARLES ENGELHARD, INCORPORATED, Newark, N. J.
ENGLISH CHINA CLAYS SALES CORPORATION, New York, N. Y.
EUREKA FLINT & SPAR COMPANY, Trenton, N. J.
EXOLON COMPANY, Blasdell, N. Y.
FEDERAL SEABOARD TERRA COTTA CORPORATION, Perth Amboy, N. J.
FERRO ENAMEL CORPORATION, Cleveland, Ohio
FINDLAY CLAY POT COMPANY, Washington, Pa.

Firestone Steel Products Company, Akron, Ohio
Fostoria Glass Company, Moundsville, W. Va.
Gayner Glass Works, Salem, N. J.
General Ceramics Company, New York, N. Y.
W. S. George Pottery Company, East Palestine, Ohio
"Giesche" Fabryka Porcelany, Sp. Akc., Katowice-Bogucice, Poland
Gillinder Brothers, Incorporated, Port Jervis, N. Y.
Gladding, McBean & Company, San Francisco, Calif.
Gleason-Tiebout Glass Company, Maspeth, N. Y.
Glenwood Range Company, Taunton, Mass.
Great Lakes Steel Corporation, Ecorse, Detroit, Mich.
A. P. Green Fire Brick Company, Mexico, Mo.
Haeger Potteries, Incorporated, Dundee, Ill.
Hall China Company, East Liverpool, Ohio
Hanley Company, Summerville, Pa.
Hanovia Chemical & Manufacturing Company, Newark, N. J.
Hardinge Company, Incorporated, York, Pa.
Harshaw Chemical Company, Cleveland, Ohio
Hartford-Empire Company, Hartford, Conn.
Hazel-Atlas Glass Company, Wheeling, W. Va.
O. Hommel Company, Pittsburgh, Pa.
L. J. Houze Convex Glass Company, Point Marion, Pa.
Illinois Clay Products Company, Joliet, Ill.
Ingram-Richardson Company, Frankfort, Ind.
International Smelting & Refining Company, East Chicago, Ind.
Irish Glass Bottle Company, Limited, Charlotte Quay, Dublin, Ireland
Isolantite, Incorporated, Belleville, N. J.
Kentucky Clay Mining Company, Mayfield, Ky.
Kentucky-Tennessee Clay Company, Paris, Tenn.
Edwin M. Knowles China Company, Newell, W. Va.
Kohler Company, Kohler, Wis.
Koppers Construction Company, Pittsburgh, Pa.
Laclede-Christy Clay Products, St. Louis, Mo.
Lapp Insulator Company, Incorporated, Leroy, N. Y.
Homer Laughlin China Company, Newell, W. Va.
Lava Crucible Company of Pittsburgh, Pittsburgh, Pa.
Lee Clay Products Company, Clearfield, Ky.
Libbey Glass Company, Toledo, Ohio
A. J. Lindemann & Hoverson Company, Milwaukee, Wis.
Locke Insulator Corporation, Baltimore, Md.
London Brick Company & Forders, Limited, London, England
Arthur G. McKee & Company, Cleveland, Ohio
Macbeth-Evans Glass Company, Charleroi, Pa.
Maryland Glass Corporation, Baltimore, Md.
Metal & Thermit Corporation, New York, N. Y.
Mississippi Glass Company, New York, N. Y.
Moore & Munger, New York, N. Y.
Mosaic Tile Company, Zanesville, Ohio
Mt. Clemens Pottery Company, Mt. Clemens, Mich.
National Aluminate Corporation, Chicago, Ill.
National Lime and Stone Company, Findlay, Ohio
Newbold Silica Fire-Brick Company, Limited, Sydney, Australia
New Castle Refractories Company, Newell, W. Va.
New Jersey Porcelain Company, Trenton, N. J.
New Jersey Pulverizing Company, New York, N. Y.
Nippon Gaishi Kabushiki Kaisha, Nagoya, Japan
Nippon Toki Kaisha, Limited, Nagoya City, Japan
North American Refractories Company, Cleveland, Ohio
Norton Company, Worcester, Mass.
Ohio Insulator Company Division, Barberton, Ohio
Onondaga Pottery Company, Syracuse, N. Y.
Edward Orton, Jr., Ceramic Foundation, Columbus, Ohio
Owens-Illinois Glass Company, Alton, Ill.
Owens-Illinois Pacific Coast Company, San Francisco, Calif.
Pacific Clay Products Company, Los Angeles, Calif.
Paper Makers Importing Company, Incorporated, Easton, Pa.
Pass & Seymour, Incorporated, Solvay, N. Y.
Pennsylvania Pulverizing Company, Lewistown, Pa.
Pennsylvania Salt Manufacturing Company, Philadelphia, Pa.
Pfaudler Company, Rochester, N. Y.
Pittsburgh Plate Glass Company, Creighton, Pa.
Porcelain Enamel & Manufacturing Company, Baltimore, Md.
Potters Supply Company, East Liverpool, Ohio
Precision Truing Tool Company, Cincinnati, Ohio
Quigley Company, Incorporated, New York, N. Y.
Republic Steel Corporation, Youngstown, Ohio
Dr. Rickmann & Rappe, G. m. b. H., Köln-Kalk, Germany
W. A. Riddell Company, Bucyrus, Ohio
Roberts & Mander Stove Company, Hatboro, Pa.
Rookwood Pottery Company, Cincinnati, Ohio
Roseville Pottery Company, Zanesville, Ohio
Ross-Tacony Crucible Company, Philadelphia, Pa.
Rundle Manufacturing Company, Milwaukee, Wis.
Rustless Iron Company, Limited, Keighley, England
Safety Grinding Wheel & Machine Company, Springfield, Ohio
Salem China Company, Salem, Ohio
Shenango Pottery Company, New Castle, Pa.
Simonds Worden White Company, Dayton, Ohio
Simplex Engineering Company, Washington, Pa.
Smith & Stone, Limited, Georgetown, Ontario, Canada
Solar Laboratories, Beaver, Pa.
Solvay Process Company, Syracuse, N. Y.
Southern California Gas Company, Los Angeles, Calif.
H. C. Spinks Clay Company, Newport, Ky.
Square D Company, Detroit, Mich.
Standard Sanitary Manufacturing Company, Louisville, Ky.
Star Porcelain Company, Trenton, N. J.
Stark Brick Company, Canton, Ohio
J. C. Steele & Sons, Statesville, N. C.
Sur Enamel & Stamping Works, Limited, Calcutta, India
Swindell Brothers, Baltimore, Md.
Swindell-Dressler Corporation, Pittsburgh, Pa.
Taylor, Smith & Taylor Company, Chester, W. Va.
Toyo Toki Kwaisha Shinozaki, Kokura City, Japan
Trenton Potteries, Trenton, N. J.
W. S. Tyler Company, Cleveland, Ohio
United Clay Mines Corporation, Trenton, N. J.
Universal Clay Products Company, Sandusky, Ohio

UNIVERSAL DENTAL COMPANY, Philadelphia, Pa.
UNIVERSAL SANITARY MANUFACTURING COMPANY, New Castle, Pa.
VERRERIES SOUCHON NEUVESEL, Lyon, France
VESUVIUS CRUCIBLE COMPANY, Swissvale, Pa.
VITREOUS STEEL PRODUCTS COMPANY, Cleveland, Ohio
VITRO MANUFACTURING COMPANY, Pittsburgh, Pa.
VOLLRATH COMPANY, Sheboygan, Wis.
WALTHAM GRINDING WHEEL COMPANY, Waltham, Mass.
WEBER ELECTRIC COMPANY, Schenectady, N. Y.
WESTERN BRICK COMPANY, Danville, Ill.
WESTERN ELECTRIC COMPANY, Chicago, Ill.
WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, Derry, Pa.
WHEELING STEEL CORPORATION, Portsmouth, Ohio
WHITALL-TATUM COMPANY, Millville, N. J.

MEMBERSHIP STATUS

Members Paid		Deferred	Subscriptions	Monthly Sales	Total Circulation
Personal	Corporation				
December 31, 1935					
1248	187	26	488	225	2174
May 31, 1936					
1306	179	53	485	200	2223

NEW MEMBERS

Corporation

BINGHAMTON BRICK COMPANY, INC., Clarence P. Austin (voter), Binghamton, N. Y.
SOLAR LABORATORIES, George H. Campbell (voter), Beaver, Pa.

Personal

FILIPPI, HUGO, 228 North LaSalle St., Chicago, Ill.; general superintendent, Illinois Brick Co.
KNAUFT, ROBERT W., Charles Taylor Sons Co., Cincinnati, Ohio; salesman.
MEYER, HENRY, 5323 Lindenwood, St. Louis, Mo.; General Refractories Co.
SPOONER, E. C. R., National Smelting Co. Ltd., Avonmouth, Glos., England; technical assistant to works director.
VOORHIES, JAMES A., 338½ Washington Ave., Clarksburg, W. Va.; consulting work, associated with Pedersen Glass, Lumberport, W. Va.

Student

KNOBLER, ALFRED E., Virginia Polytechnic Institute.
ROBINSON, PHILLIP, Sydney Technical College, N.S.W., Australia.
SMITH, GRAHAM G., University of Washington.
TAUBER, JOHN A., Ohio State University.

MEMBERSHIP WORKERS' RECORD

Corporation	
J. C. Hostetter	1
F. H. Rhead	1
Personal	
M. C. Booze	1
C. M. Dodd	1
C. W. Parmelee	1
D. E. Sharp	1
Office	1
Student	
Thomas Campbell	1
J. W. Whittemore	1
Hewitt Wilson	1
Office	1
Grand Total	**11**

KNOW YOUR OWN

On the following pages are views in the executive office of your American Ceramic Society: where your three monthly publications are edited; where your library is being accumulated; where your photograph gallery is slowly growing; and where a representative exhibit of ceramic products is being collected.

You may justly be proud of what you have here and you will be more proud as your library, your photograph gallery, and your ceramic ware exhibits grow in extent and value.

Not shown in these pictures are the eight individuals through and by whom the affairs of the Society, secretarial and editorial, are coördinated and made to function.

ENTRANCE TO MAIN OFFICE

FIGURE 1 (above)
GENERAL VIEW OF MAIN OFFICE, AMERICAN CERAMIC SOCIETY

FIGURE 2 (right)
CHARTER MEMBERS AND PAST-PRESIDENTS OF SOCIETY

TOP ROW, LEFT TO RIGHT: S. Geijsbeek, E. E. Gorton, H. C. Mueller, W. H. Zimmer, J. Parker B. Fiske, R. H. Pass, H. A. Wheeler, Karl Langenbeck.

SECOND ROW FROM TOP: C. F. Binns, Ernest Mayer, E. C. Stover, F. W. Walker, Sr., W. D. Gates, W. D. Richardson, S. G. Burt, A. V. Bleininger, R. C. Purdy.

THIRD ROW FROM TOP: H. Ries, C. A. Weelans, A. S. Watts, Ellis Lovejoy, C. W. Parmelee, R. R. Hice, L. E. Barringer, G. H. Brown.

FOURTH ROW FROM TOP: H. F. Staley, R. T. Stull, R. H. Minton, F. K. Pence, F. H. Riddle, A. F. Greaves-Walker, R. D. Landrum, E. W. Tillotson, R. L. Clare.

FIFTH ROW FROM TOP: B. M. Hood, M. C. Booze, G. A. Bole, E. V. Eskesen, E. P. Poste, J. C. Hostetter, W. Keith McAfee, J. M. McKinley, F. C. Flint.

PHOTOGRAPHS BELOW PANELED GROUP: Board of Trustees, 1936–37, including, McAfee, McKinley, and Flint, above. LEFT TO RIGHT: J. L. Carruthers, R. B. Sosman, F. H. Rhead, W. C. Lindemann, P. D. Helser, J. L. Child, J. T. Littleton, Edward Orton, Jr.

BOTTOM ROW: G. H. Brown, C. E. Bales, H. B. Henderson.

PANEL AT LEFT: A. F. Hottinger, Greetings to English Ceramic Society in memory of Josiah Wedgwood, F. R. Henry, C. L. Allen, B. E. Salisbury.

FIGURE 3 (above)

VIEW OF OFFICE OF GENERAL SECRETARY

FIGURE 4 (right)

Part of library in office of General Secretary; above, three framed Equilibrium Diagrams issued by R. B. Sosman; photograph of T. A. Randall, left; photograph of Frank G. Holmes, in middle; at right, two views of General Orton.

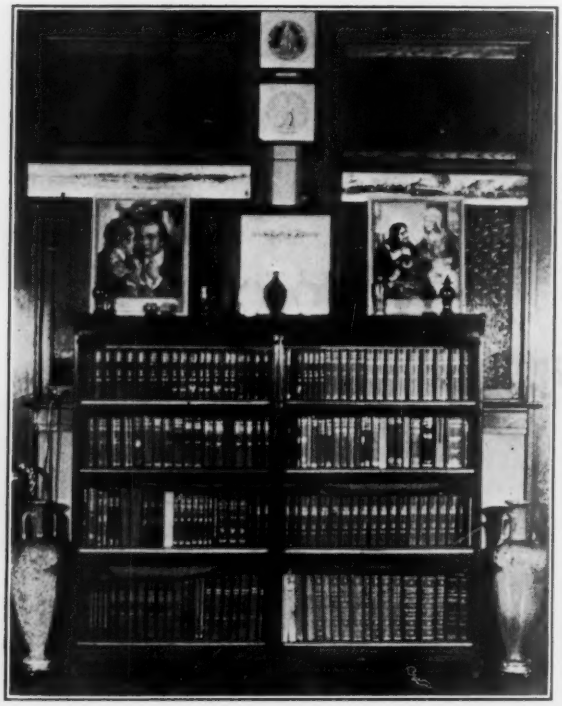


FIGURE 5

PART OF LIBRARY IN OUTER MAIN OFFICE. On either side of bookcases are the low-fire crystalline glaze jars made by F. H. Rhead. Above; photographs of American Ceramic Society seal; framed charter of American Ceramic Society on top of bookcases. Long panels show kiln and mines in Georgia and group of visitors at 1926 Meeting. Two reproductions in color are history of optical glass from Bausch & Lomb Optical Co. The exquisite examples of crystalline, copper red, and aventurine glazed and cloisonné artware on the bookcases are only barely discernible in this illustration.

FIGURE 6

ADDITIONAL BOOKCASES SHOWING more of the library in General Secretary's office. Books and pamphlets are stacked two deep. This library is in constant use by members; soon it must be cataloged and a librarian employed.

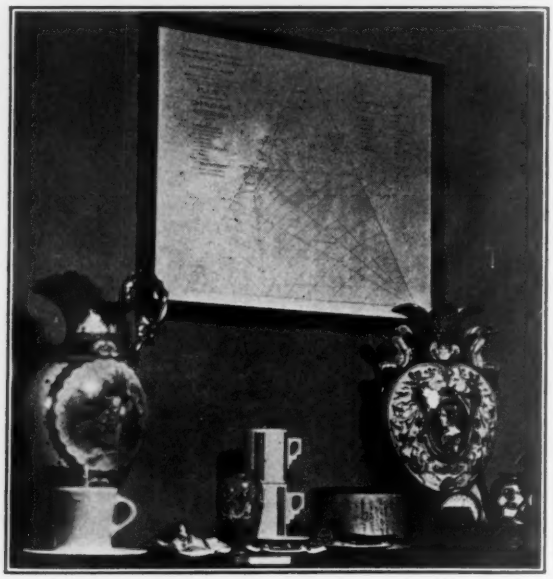


FIGURE 7 (left)

RIGHT, Italian majolica vase; left, Imperial Crown china vase from Austria. Above, framed Equilibrium Diagram $CaO–Al_2O_3$ issued by R. B. Sosman. These are above the file cases in the office of the General Secretary. The several framed photographs of individuals and groups which are on the wall beside this case are not shown in the picture.

FIGURE 8

OFFICE OF ASSISTANT EDITOR. Left, Steuben glass jar in corn yellow designed by Frederick C. Carder, porcelain rose jar by Paul E. Cox, and a porcelain elephant; above, portrait of General Orton. Photographs (left) reading down: C. E. Williams, A. C. Fieldner, E. R. Weidlein, R. M. Howe. Center, E. W. Washburn, Greetings to American Ceramic Society from the Czechoslovak Ceramic Society. Photos at right, T. S. Curtis, Bernard Moore; Group, J. W. Mellor, Frank West, and R. C. Purdy; J. T. Robson. In the files in this office are the "papers" which appear in *The Journal* and *The Bulletin*. All drawings, correspondence, and proofs of each paper are kept in separate, appropriately labeled envelopes with the original manuscript.

FIGURE 9

VIEW OF OFFICE OF THE ASSISTANT EDITOR. Three Steuben glass jars designed by Dr. Carder. Book ends of fireclay refractories supplied by Chicago Retort and Fire Brick Co. The panels of photographs of members and prominent ceramists here and abroad on the walls of this office are shown in Figs. 8, 20, and 24.

FIGURE 10

VIEW OF ABSTRACT OFFICE showing shelves of current periodicals. Right, the jar presented by the Czechoslovak Ceramic Society to R. C. Purdy, commemorating his election to Honorary Membership. In this office are kept the card files by which the abstracts are checked by title, author, and journal reference. Back issues of periodicals received in this office are not shown. These are constantly being searched for articles requested by readers of *Ceramic Abstracts*.

FIGURE 11

VIEW OF GLASSWARE IN MAIN OFFICE. Upper shelf, left, old glass wine receptacle; glass jars designed by Frederick Carder. Lower shelf, display of glass supplied by Hazel-Atlas Glass Co.

FIGURE 12

TOP ROW, types of old glass. Lower shelf, part of display from Federal Glass Co. Top photograph, C. A. Bloomfield and General Orton. Center, group picture of Enamel Division, Middletown, Ohio, 1925. Bottom, left, Summer Meeting, American Ceramic Society, Chicago, 1933. Right, Porcelain Enamel Institute in front of Armco Ferro House.

FIGURE 13

THE BINS SHOWN in Fig. 1 contain ceramic ware exhibits. Closeup views of these bins are shown in Figs. 13 to 16. On top, at the right in Fig. 13, is a jar made by Arthur E. Baggs. In the top bin, at the right, is a display of Buffalo Pottery. To the left of this is a group of fine art pieces including vases by E. DeF. Curtis, C. F. Binns, F. H. Rhead, and Margaret K. Cable, and two large cloisonné plates. In the third bin from the right, top row, are shown examples of Sicard ware, a portrait bust by F. H. Norton, and other pieces. Since the photograph was taken two large jars, one made in France, the other at Weller Pottery showing the Sicard type of luster decoration, now make the bin exclusively Sicard ware. At the left top are examples of the tinted low-fire talc ware of California. The Lenox, Inc., display is second from the right in the second row. Scammell and Bailey-Walker ware are in the other two bins.

FIGURE 14

IN THE TOP CENTER is a large vase made in India, to the left is a terra cotta cat taken by the 1928 touring American ceramists from a wall near Paris. The new ware by W. S. George is in the two bins on the left. Artware made at Ames, Iowa, by Paul E. Cox is shown in the bin second from the left in the lower row. Coxon Belleek is next and at the extreme right is Shenango ware. The upper bins from right to left show (1) Parian figures, (2) porcelain toys from Benares Hindu University, and (3) work by R. Guy Cowan.

FIGURE 15

CAMBRIDGE GLASS in three bins upper right; in the lower bins from right to left are pieces by Onondaga Pottery, Salem China Co., and Homer Laughlin China Co.; at left are two bins of mixed exhibits.

FIGURE 16

A PYREX-BRAND washing machine liner is shown on the table; sewer pipe in the bin second from right bottom row. This pipe was thrown on a potter's wheel and served for decades in Jackson County, Ohio. On top of the shelves, left to right, porcelain insulators by Westinghouse; two pieces of terra cotta by Conkling-Armstrong; chemical stone ware still by General Ceramics.

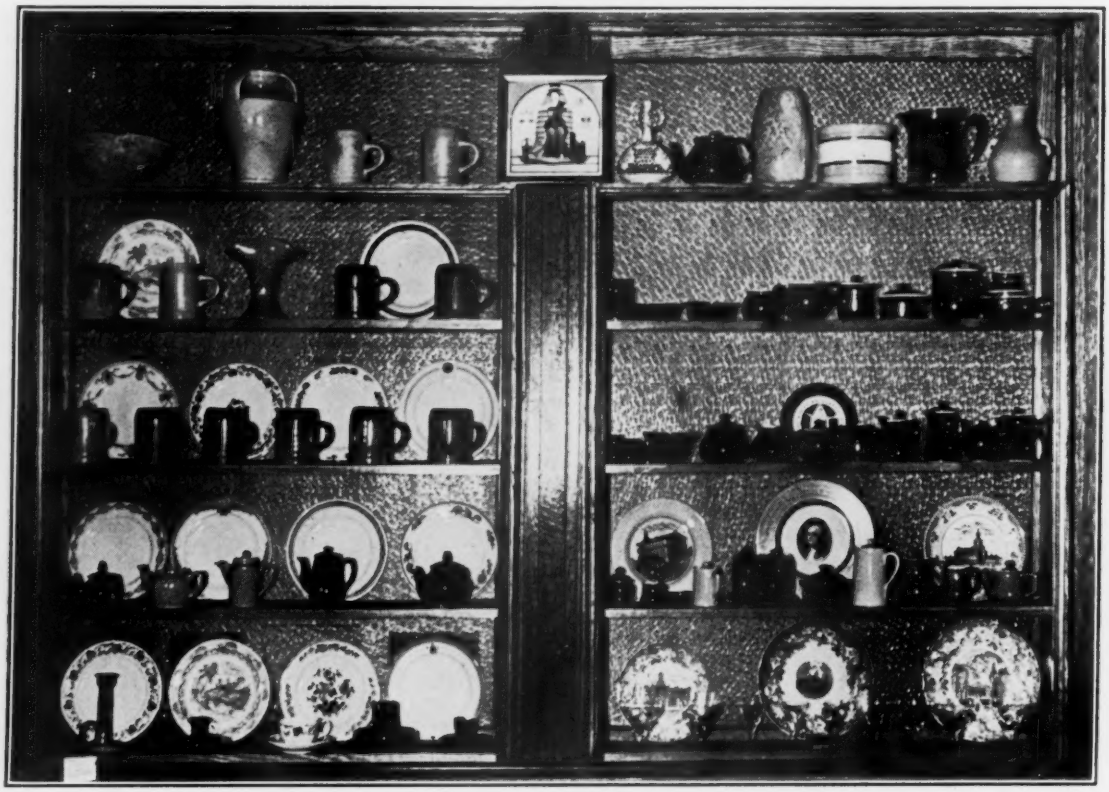


FIGURE 17 (above)
A MIXED DISPLAY OF Hall china, Fulper pottery, and Mayer china is shown here. The George Washington plate was made by Buffalo Pottery.

FIGURE 18 (right)

A TERRA COTTA BENCH MADE BY Northwestern Terra Cotta Company; a block of Corhart electrocast mullite; flues from America's first Dressler tunnel kiln; and, on the shelves and window ledge, an exhibit of Champion porcelain.

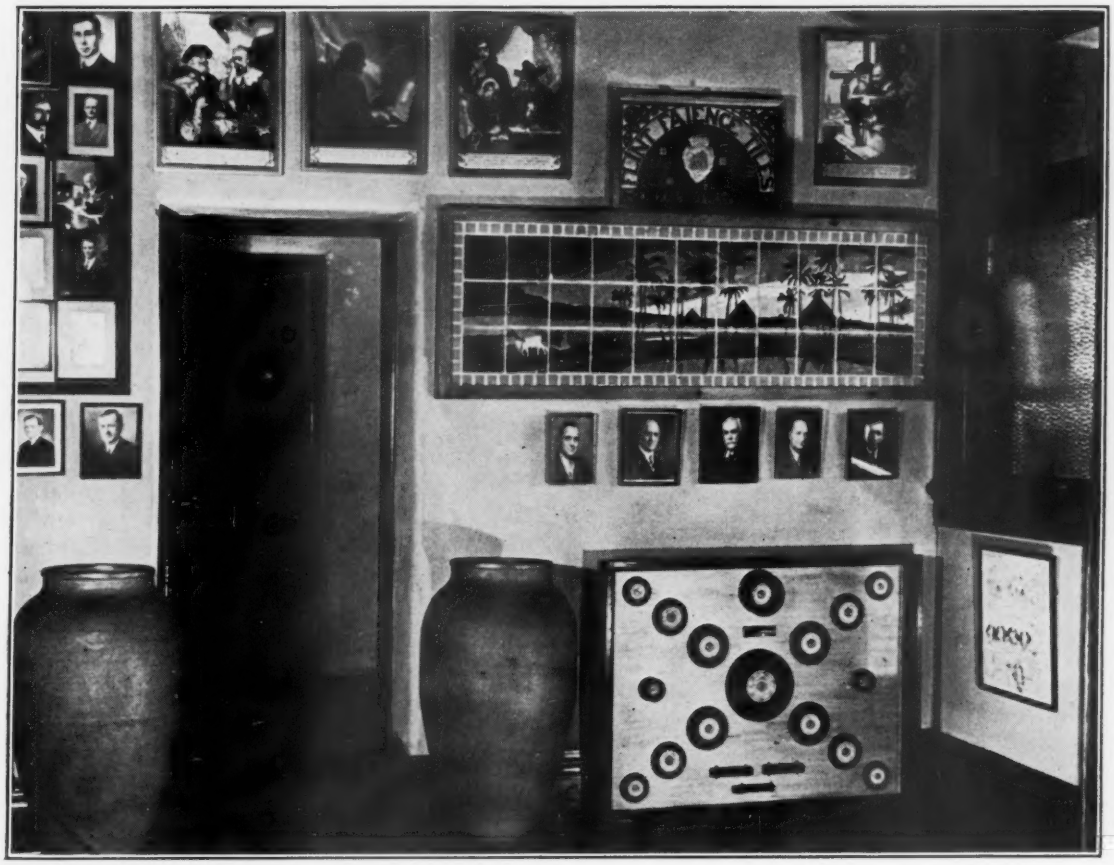


FIGURE 19

VIEW OF ENTRANCE TO MAIN OFFICE

FOUR COLOR REPRODUCTIONS OF PAINTINGS, above door, from Bausch & Lomb Optical Co., showing history of optical glass.
TILE PANELS from Flint Faience Tile Co.
PHOTOGRAPHS BELOW: C. L. Sebring, F. W. Walker, Sr., J. A. Campbell, V. V. Kelsey, A. Silverman.
BELOW, panel of grinding wheels and abrasives from Abrasive Co.
STONE JARS on either side of doorway from Maurice A. Knight.

FIGURE 20 (above)

VIEW OF SOUTH WALL IN EDITORIAL OFFICE

TOP, LEFT TO RIGHT: Mabel C. Farren, Herford Hope, R. R. Danielson, R. F. Ferguson, C. F. Tefft, G. M. Tucker, D. W. Ross, J. W. Gillinder, M. E. Holmes, and W. G. Worcester.

SECOND ROW: H. G. Wolfram, D. T. Farnham, H. G. Schurecht, C. F. Kerr, E. C. Hill, August Staudt, F. B. Ortman, F. L. Steinhoff, Margaret Cable, Hewitt Wilson, and P. E. Cox.

THIRD ROW: A. E. R. Westman, B. E. Salisbury, J. W. Hepplewhite, J. D. Whitmer, E. N. McGee, H. P. Humphrey, B. T. Sweely, A. E. Baggs, A. V. Henry, R. M. King, A. I. Andrews, and S. R. Scholes.

FOURTH ROW: C. B. Harrop, A. P. Potts, M. W. Blair, E. T. Montgomery, A. Malinovszky, A. S. Walden, Joseph Sinel, J. R. Hopkins, R. K. Hursh, A. Silverman, and F. H. Norton.

FIFTH ROW: J. L. Crawford, Edward Schramm, A. E. Williams, W. J. Stephani, W. V. Knowles, Karl Türk, D. E. Sharp, Louis Navias, C. M. Dodd, R. J. Montgomery, H. M. Kraner, and F. E. Bausch.

BELOW: F. J. Tone, E. G. Acheson, Wilhelm Pukall, Julius Aron, Herman Seger, G. Gehloff, J. W. Mellor; (*below*) Hermann Hecht, W. E. S. Turner.

FIGURE 21 (right).—Porcelain enamel panel supplied by Republic Steel Corporation.

FIGURE 22

VIEW OF NORTH WALL, MAIN OFFICE

PHOTOGRAPHS, TOP ROW, LEFT TO RIGHT: R. A. Weaver, D. F. Stevens, G. P. Fackt, A. W. Kimes, S. C. Lind, J. D. Martin.

SECOND ROW: G. E. Barton, F. F. Frederick, G. K. Burgess, J. G. Vail, J. A. Holmes, W. J. Cannon.

THIRD ROW: F. S. Lawrence, Walter Fickes, W. L. Evans, C. W. Crane, C. B. Thwing, Mr. Chapman.

FOURTH ROW: P. T. Anderson, D. A. Lyon, W. K. Brownlee, R. A. Horning, E. C. Bingham, A. E. Stacey, Jr.

FIFTH ROW: J. W. Cruikshank, Mr. Walsh, F. T. Owens, P. P. Budnikoff, H. D. Lillibridge, T. H. Sant.

SIXTH ROW: O. W. Renkert, J. M. Smith, William Schlake, F. M. Ransbottom, J. E. Lewis.

LEFT, READING DOWN: J. G. Wilcox, F. S. Thompson, E. V. Eskesen, Frederick Carder.

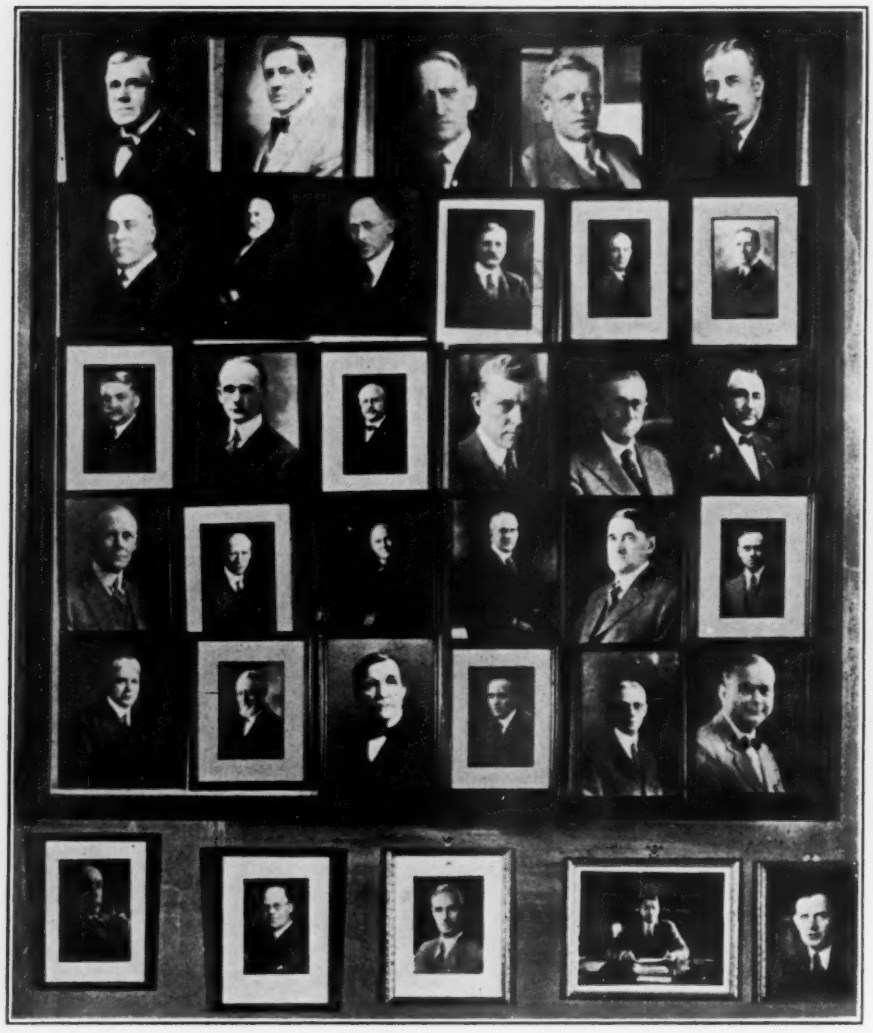


FIGURE 23

VIEW OF SOUTH WALL, MAIN OFFICE

PHOTOGRAPHS, LEFT TO RIGHT, TOP ROW: William Blair, Ralph Stoddard, E. A. Hitchcock, C. L. Norton, H. E. Howe.
SECOND ROW: John Kemp, C. A. Bloomfield, E. C. Sullivan, M. E. Gregory, A. S. Zopfi, J. A. Jeffery.
THIRD ROW: S. W. Stratton, H. Foster Bain, T. A. Randall, E. R. Weidlein, T. B. Anderson, I. M. Justice.
FOURTH ROW: Robert Linton, Frederick Carder, W. M. Thompson, T. E. Wilson, J. L. Stuckey, T. A. Klinefelter.
FIFTH ROW: J. L. Harper, C. W. Rolfe, Edward Hart, A. J. Foltz, C. H. Herty, W. D. Demuth.
SIXTH ROW: H. W. Gillett, Gordon Keith, G. W. Rightmire, C. Forrest Tefft, G. S. Diamond.

FIGURE 24

VIEW OF NORTH WALL IN EDITORIAL OFFICE

PHOTOGRAPHS, LEFT TO RIGHT, TOP ROW: F. R. Pyne, H. D. Foster, R. P. Brown, E. E. Ayars, R. L. Frink, W. A. Hull, H. H. Clark, I. E. Sproat, S. C. Linbarger, H. F. Kirk.

SECOND ROW: O. B. Westmont, F. W. Davis, G. E. Merritt, Mary G. Sheerer, F. W. Schroeder, O. O. Bowman, 2nd, M. E. Manson, J. S. Lathrop, H. H. Sortwell, J. B. Shaw.

THIRD ROW: J. R. Withrow, H. R. Straight, H. C. Arnold, C. F. Geiger, W. E. Dornbach, G. F. Fulcher, R. D. Cooke, E. deF. Curtis, W. F. Wenning, T. A. Shegog, F. F. Grout, Metta Seymour.

FOURTH ROW: T. D. Hartshorn, W. N. Harrison, R. F. Geller, W. L. Pendergast, R. A. Heindl, Howells Fréchette, R. E. Evans, P. G. Larkin, C. W. Saxe, C. W. Hill, E. L. Hettinger, B. E. Whitesell.

FIFTH ROW: H. Insley, A. N. Finn, W. M. Clark, J. W. Greig and N. L. Bowen; (below) S. J. McDowell and J. E. Hansen, S. L. Galpin, R. E. Arnold, C. D. Spencer, and W. E. Lemley; (below) T. G. McDougal, D. P. Forst, and Richard Türk; C. C. Treischel, A. H. Radasch, B. F. Wagner; (below) E. H. Fritz and A. L. Bennett.

SIXTH ROW: (Refractories Division Advisory Committee), R. A. Heindl, J. S. McDowell, R. S. Bradley, F. A. Harvey, L. J. Trostel, C. E. Bales, L. C. Hewitt.

JAMES PASS

English Born

James Pass was born of a family of potters in the heart of the English pottery district. His father and mother, Richard and Anne (Greatbatch) Pass, left their home town, Burslem, and came to America in 1863, when James was seven years old. After a year or two in Cincinnati, Ohio, the family settled in Trenton, New Jersey, then the pottery center of the new world, where Richard worked as pottery foreman and superintendent, and James attended the primary grades of the public schools where he received his only schooling.

Formal Schooling

The readjustment to the customs and manners of the new land was not easy for the sensitive little English boy with his foreign ways and foreign clothes. He was slow in his studies and was not considered a promising pupil by his teachers. He heartily disliked the school and had a hard time with his schoolmates who never forgave his English birth and treated him with the unkindness which only a gang of thoughtless boys could show toward one not stamped in their own mold. This early trial is significant, for it may explain largely his championship of the "under dog," his sympathetic understanding, and his fine sense of justice, which were pronounced traits of character in his later years.

Pottery Apprenticeship

At the age of thirteen, when he was still struggling with the intricacies of fractions, his parents yielded to his plea to be allowed to leave school and to start working in a pottery. At the pottery, James was put at handling and wedging clay, a heavy task for one so young and not blessed with a large frame or robust strength. This was the beginning of a life's work, which was to last for forty-four years.

The boy worked at many tasks in the pottery and gained a detailed knowledge of potting practice. This experience undoubtedly laid the foundation for his future success. Years after, the skilled workmen in his plant marvelled when their boss, in his rounds about the shop, would detect with a glance a faulty operation or a cunning trick and immediately correct the error or put to shame the wrongdoer by stepping to the bench and performing the task with masterly skill, frequently repaying the culprit with a bit of humor or well-aimed sarcasm. In later years his was not an idle boast that he could personally perform any task he required of another, from modeling and carving hand tools to dipping and kiln-firing.

Onondaga Pottery

In 1875 the family moved to Syracuse, New York, where the father became superintendent of the Onondaga Pottery and the son, a foreman. This Company had been organized four years before to take over the dilapidated property of the Empire Pottery Co., which had been striving for a number of years, without financial success, to make what it called "white ware." The ware was true to name, however, only in comparison with a still earlier product which had consisted of bean pots, mixing bowls, miniature clay lions, and the like.

Belief in Value of Science

Though only nineteen years old when the family moved to Syracuse, James had already shown a marked bent toward science and mechanics and had a conception of what the scientific study of potting problems could do for the industry. In fact, before leaving Trenton he had attempted to interest the potters there in the establishment of a coöperative laboratory for the study of fundamental problems common to them all. Undoubtedly this was the first time such a plan had been proposed and it was far too radical for the old, conservative, rule-of-thumb potters who turned a deaf ear to his arguments.

Study at Syracuse University

This rebuff brought no discouragement to the eager young mind, and James continued to study in the evenings after the day's work was done. Believing, as was natural enough, that chemistry would be the "open sesame" to the ceramic problems, he took a special evening course in analytical chemistry at Syracuse University, then in its infancy, paying his tuition by instructing the regular students in the elementary courses.

Laboratory at Home

After working long hours in the shop, he would spend most of the night studying or experimenting in the little laboratory he equipped in the cellar of his home. He met disappointment after disappointment as he slowly learned what many others have had to learn, that pure chemistry is not to be an "open sesame" to the potter's art. It must be remembered that physical chemistry as we know it today was unknown in the "70's."

With Mayer Brothers

When James was about twenty-three years old, he left the employ of the Onondaga Pottery Company to seek broader opportunities. For a while he was with the Mayer Brothers at Beaver Falls, Pennsylvania.

Pottery Venture in Missouri

In 1880 his father died. James was engaged to take charge of a venture to make pottery from local clays in Missouri. He invested in this enterprise what he had inherited from his father and moved to Cape Girardeau. We do not know much about his experience there, except that the clays did not prove up to expectations and that the attempt was a failure. A friend who knew James during his short and ill-fated stay at Cape Girardeau tells of an experience which illustrates the unusual qualities of this young potter's mind. James had experienced the need of algebraic methods in the development of his potting formulas and turned for assistance to this friend, who was then a high-school student. To the friend's astonish-

ment he found that James, working by himself, had already developed a system of algebra entirely practical and workable but very different in signs and symbols from the conventional.

When the young potter turned his back upon the failure at Cape Girardeau, he had reached the age of twenty-seven. His small inheritance had been lost and his sole material wealth consisted of fifty dollars and his railroad ticket home. Life looked dark indeed.

Return to Trenton

For a time he supported his mother and himself by working as a kiln setter in a Trenton pottery. It must have been a sad return to the city which he had left nine years before with such high hopes. Many a man would have been broken and made bitter by this apparent failure in life, but this man's nature was big enough to rise above disaster. In later years, he often said that he had experienced many failures and from each had learned a lesson which proved of immeasurable help to later success.

Return to Onondaga

In 1884 he was called back to Syracuse as superintendent of the Onondaga Pottery Company. This was the beginning of an unbroken connection which lasted until his death. At that time the Company employed about fifty hands and had four updraft kilns which had been built in 1880. Lewis Lawton, who today is famous as a designer and builder of pottery ovens, worked as a mason's tender in the construction of these kilns.

Mr. Pass devoted himself to the work at the Onondaga Pottery with a zeal and an energy which seems almost beyond belief. To quote one of the older men who worked for him in those days, "Mr. Pass personally supervised all repairs and construction, he instructed the modeler, managed the clay shop, prepared the mixes, and did the weighing, he bossed the kilnmen and looked after the dippers, in several instances dipping whole kilns of ware himself, and then fired both biscuit and glost kilns. He found time to improve the gold mixtures for the decorators, construct a pug mill of his own design, and so thoroughly understood kiln building as to erect kilns with the assistance of local brickmasons, and he conducted all of the operations of installation or replacement so that not a minute of working time was unnecessarily lost, making an occasional all-night session a matter of routine."

General Manager in 1892

He was constantly experimenting with new methods of potting and materials from new sources, compounding new colors, and making innumerable trials with new glaze and body formulas; and added to all this were the duties and responsibilities of conducting the business. In 1892, at the age of thirty-six, he was made general manager of the Company.

Pass and Seymour, Incorporated

In 1890 James Pass, in partnership with Albert Seymour, an electrical engineer, organized and equipped a factory for the manufacture of porcelain electrical insulators. Later this plant was moved to the suburb of Solvay and enlarged, and the manufacture broadened to include a complete line of wiring equipment. This venture met with remarkable success almost from the beginning and, although conducted with the conservatism which was a marked trait in Mr. Pass' character, it grew until, at the time of his death, it employed 350 men. In 1901 papers of incorporation were taken out under the name of Pass & Seymour, Inc., and James Pass became president, which position he held until his death in 1913.

Married Miss Salisbury

The same year in which this enterprise was founded, James Pass married Adelaide Salisbury who was organist at the church in which he led the choir. This was the beginning of a life-long union, whose harmony, devotion, and beauty only their children can know. Three children were born to them, Eleanor in 1891, Richard Henry in 1893, and James Salisbury in 1904. The little money which Mr. Pass and his mother had saved by the most frugal living, they had intended to use in building a home for the bride, but she with characteristic spirit and courage requested that it be spent instead in the Pass & Seymour partnership which was under consideration. But for this sacrifice, Pass & Seymour, Inc., would never have existed. In the early years of this venture the strictest economy was necessary. Most of the office work was done at the Pass home, where Mr. Pass dictated the correspondence in the evenings after his labors at the pottery. Mrs. Pass acted as stenographer and, during the day, kept the books while her children played about her.

Noncrazing Semiporcelain in 1884

Shortly after returning to the Onondaga Pottery Company in 1884, James Pass developed a hard-fired, well-made, semivitreous porcelain which was called O. P. china and which was the first really good ware made by this Company. It was sold under absolute guarantee against crazing, which was considered an extraordinary thing, for all American ware up to that time crazed badly in service. The product was well received and was the foundation of the financial success of the Company.

Vitrified China in 1888

Not satisfied with this, however, Mr. Pass experimented exhaustively in the development of a vitrified product. This was the beginning of his greatest contribution to the potting art. After many disappointments he succeeded in producing a thin, beautifully white, translucent china. This ware was not bone china, Belleek, or continental porcelain, yet it had nearly the whiteness of bone china and the delicacy of Belleek and was as translucent as true porcelain. Moreover, in resistance to chipping and breaking it was superior to all of these and also to the hard-fired, semiporcelain of England. But possibly its most remarkable property was that, in spite of its completely vitreous body and exceeding thinness, it could be manufactured by the earthenware process by exercising much skill in potting and in the biscuit and glost firing.

At first this ware was produced in a small way and in a limited number of shapes. It was introduced to the

market in 1888 under the name of Imperial Geddo and stamped with initials of its maker, J. P. Its beauty and comparative durability attracted much attention and speedily gained an enviable reputation for the Company. In 1893 this ware, or a composition similar to it, was exhibited at the World's Fair in Chicago and received an award. The judges and critics, in addition to commending the translucency and beauty of the china, noted particularly its exceptional toughness and the fact that it had been fired on pins in the glost kiln and yet had a hard glaze and was perfectly straight.

The creation of this remarkable ware by James Pass marked a new era in the art of potting in this country. The great majority of the vitrified china manufactured in the United States today is of the same type and made by the same process, although in some instances the qualities of whiteness and translucency have been sacrificed unduly to greater ease of production. At the Onondaga Pottery various minor changes in composition of body and some more important alterations in the glaze formulas were made by Mr. Pass in succeeding years, but the Company's product today is essentially the same in composition and process as that which its leader produced in the early "90's."

The new product was so well received in the early "90's" that the question of the advisability of discontinuing altogether the manufacture of semiporcelain arose; and in 1896 Mr. Pass made a trip to Europe to decide whether manufacturing china in this country could be a continued success in competition with the cheap labor of the foreign potteries. He decided that this was possible, and on his return the Company ceased the production of semiporcelain.

Decalcomania Started

At that time the only method of decorating consisted in lines or printed outlines filled in by hand. The decalcomania process was already in use in France but not in England or in this country. To study this process and also some recent developments in potting machinery, especially the elliptical jigger, Mr. Pass made another trip to France. He obtained the necessary knowledge and equipment and on his return established at the Onondaga Pottery the first ceramic decalcomania plant in this country. He brought back also the elliptical jigger.

The development of the decalcomania process here was beset with difficulties. One of these was the adaptation of this method of decorating to the underglaze process. The ware, as it came from the biscuit kilns and before glazing, was not sufficiently smooth to permit a nice application. Mr. Pass overcame this difficulty by the invention of a tumbling machine in which the ware was polished.

Rolled-Edge Introduced

In the late "90's" he borrowed from the French the idea of the rolled-edge ware and started here the production of this shape, which is now standard in nearly all hotels and restaurants.

X-Ray Contribution

In the labor of directing the pottery and the electrical works, he did not lose his keen interest in scientific studies. In the late "90's," the use of the X-ray was being developed and the results were the marvel of that decade. Mr. Pass found time to study this development thoroughly and he constructed an X-ray outfit which was one of the first in that section of the country. Nearly every part of this extensive equipment he made with his own hands, from the small fixtures to the large induction coil and condensers. This apparatus worked so well that doctors used to bring their patients with broken bones to have the fractures photographed.

The perfection of workmanship in this machine bears proof that its maker was a remarkably able mechanic, possessed of a nicety of conception and execution possible only to one trained to exact thinking. His versatile mind was also much interested in the microscope and he attempted to make use of it in the solution of some of the ceramic problems with which he was constantly struggling.

Charter Member, American Ceramic Society

When in 1898 the American Ceramic Society was founded James Pass became a Charter Member. He was always interested in the work and welfare of this organization. His attitude is well expressed in the following quotation from his address to the United States Potters in 1907, when president of their Association:

"I would like to see the Association give some form of recognition to the excellent work done by the American Ceramic Society. We have the highest respect for the old empirical potter, whose enthusiasm and laborious effort gave us a highly developed industry long before we had any science of potting; but we can not help recognizing that we are living under a different and an ever-developing environment, and that to be successful either now or in the future, we must bring to our aid in its most developed form every contemporary art or science that can in any way aid the development of the pottery industry. More than twenty-five years ago I urged the potters of Trenton to establish an experimental station to carry on an investigation of those phenomena which are of general interest to the manufacturing potter, and today that service is being performed for us by an enthusiastic, hard-working body of men, whose recorded labors are open to us all in the *Transactions of the American Ceramic Society*. We shall have to reckon with the work of this Society in the future and I would like to see a good understanding and a close connection between the American Ceramic Society and the United States Potters Association."

But he was never able to take a very active part in the work of the Society. The labors of the "80's" and "90's" had been far too great for his strength to bear and had exacted a sad toll of his physique. Chronic asthma developed and caused severe suffering during the remainder of his life. The sacrifice and self-discipline of his last seven years when often every step was an effort and every breath a pain are too deeply engraved in the hearts of those who loved him to be related. And yet he carried on, managing the increasing business of the two companies, supervising the potting shop, and personally performing

most of the laboratory work. His early training, when for many years he had to rely entirely on his own resources, and the high standards which he had established made very difficult for him the delegating of authority to others, and thus his own burden was increased.

Died in 1913

During these years the Pottery continued to prosper until in 1913 it employed over 700 men and was the largest producer of vitrified china in this country, and the only pottery producing in quantity thin, vitrified ware, with the single exception of Lenox, Incorporated, of Trenton, New Jersey.

In the fall of 1913, this great Potter passed to his Fathers. On the pan of the balances in his laboratory was found a sample of a new body mixture.

—RICHARD PASS

DECEMBER 25, 1922

OFFICERS OF THE AMERICAN CERAMIC SOCIETY 1936–1937

President: Francis C. Flint, Chief Chemist, Hazel-Atlas Glass Co., Zanesville, Ohio

Vice-President: Robert B. Sosman, Research Laboratory, United States Steel Corp., Kearny, N. J.

Treasurer: H. B. Henderson, H. B. Henderson Co., New Brighton, Pa.

Past-President: J. M. McKinley, North American Refractories Co., Cleveland, Ohio

Past-President: W. Keith McAfee, Universal Sanitary Mfg. Co., New Castle, Pa.

OFFICERS OF THE FELLOWS

Dean: A. S. Watts, Ohio State University, Columbus, Ohio

Associate Dean: M. C. Booze, Chas. Taylor Sons Co., Cincinnati, Ohio

Secretary: G. H. Brown, Rutgers University, New Brunswick, N. J.

TRUSTEES OF THE INDUSTRIAL DIVISIONS*

Art: Frederick H. Rhead, Homer Laughlin China Co., Newell, W. Va. (1937)

Enamel: W. C. Lindemann, A. J. Lindemann & Hoverson Co., Milwaukee, Wis. (1937)

Glass: J. T. Littleton, Corning Glass Works, Corning, N. Y. (1938)

Materials and Equipment: G. H. Brown, Rutgers University, New Brunswick, N. J. (1939)

Refractories: C. E. Bales, Ironton Fire Brick Co., Ironton, Ohio (1937)

Structural Clay Products: J. Leo Child, Hancock Brick & Tile Co., Findlay, Ohio (1939)

Terra Cotta: J. L. Carruthers, Ohio State University, Columbus, Ohio (1939)

White Wares: P. D. Helser, General Ceramics Co., New York, N. Y. (1938)

* Date of expiration of term in parentheses.

COMMITTEE APPOINTMENTS

Executive: R. B. Sosman, W. K. McAfee, and G. H. Brown

Finance: Chairman, C. E. Bales; W. C. Lindemann and P. D. Helser

Publications: Chairman, J. D. Sullivan, Battelle Memorial Institute, Columbus, Ohio
R. Guy Cowan, Onondaga Pottery Co., Syracuse, N. Y.
R. F. Sherwood, United Feldspar Corp., New York, N. Y.
T. A. Klinefelter, National Bureau of Standards, Washington, D. C.
R. C. Purdy, Columbus, Ohio

Research: Chairman, Louis Navias, General Electric Co., Schenectady, N. Y.

Ceramic Education: Chairman, H. E. White, Lava Crucible Co. of Pittsburgh, Zelienople, Pa.
E. H. Fritz, Westinghouse Elec. & Mfg., Co., Derry, Pa.

Rules: Chairman, W. Keith McAfee, New Castle, Pa.

Geological Survey: Chairman, H. Ries, Cornell Univ., Ithaca, N. Y.
Hewitt Wilson, Univ. of Washington, Seattle, Wash.
J. W. Whittemore, Virginia Polytechnic Inst., Blacksburg, Va.
J. E. Lamar, State Geology Div., Univ. of Illinois, Urbana, Ill.
Wilber Stout, State Geologist, Columbus, Ohio.

Data: Chairman, F. P. Hall, Onondaga Pottery Co., Syracuse, N. Y.

Standards: Chairman, Arthur S. Watts, Ohio State Univ., Columbus, Ohio

Membership: Chairman, Grant S. Diamond, Electro Refractories & Alloys Corp., Lackawanna, N. Y.

Management: Chairman, E. H. Fritz, Westinghouse Electric & Mfg. Co., Derry, Pa.

Sections and Divisions: Chairman, E. P. Poste, Chattanooga, Tenn.
H. E. White, Zelienople, Pa.
H. M. Kraner, Bethlehem Steel Co., Bethlehem, Pa.
T. S. Curtis, Industrial Research Lab., Huntington Park, Calif.
H. V. Kaeppel, Industrial Publications, Inc., Chicago, Ill.

Patent (temporary): Chairman, J. C. Hostetter, Corning Glass Works, Corning, N. Y.
F. H. Riddle, Champion Spark Plug Co., Ceramic Div., Detroit, Mich.
E. O. Hiller, Hartford-Empire Co., Hartford, Conn.

Film Library: Chairman, H. E. Simpson, Mellon Institute, Pittsburgh, Pa.
F. B. Hobart, Battelle Memorial Institute, Columbus, Ohio
R. C. Purdy, Columbus, Ohio

Dust Hazard Committee: Chairman, F. C. Flint, Hazel-Atlas Glass Co., Zanesville, Ohio
Edward Schramm, Onondaga Pottery Co., Syracuse, N. Y.
O. I. Chormann, Pfaudler Company, Rochester, N. Y.
J. C. Hostetter, Corning Glass Works, Corning, N. Y.
L. H. Milligan, Norton Company, Worcester, Mass.

APPOINTED REPRESENTATIVES

American Standards Association

(*1*) *Sectional Comm. on Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A-40:* P. D. Helser, New York, N. Y.
(*2*) *Committee C-29:* D. H. Rowland, Locke Insulator Corp., Baltimore, Md.
(*3*) *Committee on Safety Code, Safety Glass:* A. E. Marshall, 501 Fifth Avenue, New York, N. Y.

American Society for Testing Materials

(*1*) *Committee C-8:* N. W. Taylor, Pennsylvania State College, State College, Pa.
(*2*) *Committee E-1:* F. H. Norton, Massachusetts Institute of Technology, Cambridge, Mass.
(*3*) *Committee A-1:* H. F. Staley, Metal & Thermit Corp., New York, N. Y.

American Society of Mechanical Engineers

(*1*) *Petroleum Div.:* H. R. Straight, Straight Engineering Co., Adel, Iowa
(*2*) *Process Div.:* W. K. McAfee, New Castle, Pa.

National Research Council

(*1*) *Div. of Geology and Geography:* R. C. Purdy, Columbus, Ohio
(*2*) *Div. of Chemistry and Chemical Technology:* J. C. Hostetter, Corning, N. Y.

Orton Foundation Board

J. M. McKinley, North American Refractories Co., Cleveland, Ohio

Permanent Comm. on Simplification of Sizes and Varieties of Vitrified Paving Brick

O. W. Renkert, Metropolitan Paving Brick Co., Canton, Ohio

Inter-Society Color Council (temporary)

Chairman, V. H. Remington, B. F. Drakenfeld & Co., Inc., Washington, Pa.
A. C. Hardy, Massachusetts Inst. of Technology, Cambridge, Mass.
F. H. Rhead, Homer Laughlin China Co., Newell, W. Va.

International Association for Testing Materials

A. S. Watts, Columbus, Ohio

Illuminating Society and Luminous Glassware Guild

Chairman, H. H. Blau, Macbeth-Evans Glass Co., Charleroi, Pa.
R. A. Miller, Pittsburgh Plate Glass Co., Pittsburgh, Pa.
R. R. Shively, B. F. Drakenfeld Co., Washington, Pa.
A. N. Finn, National Bureau of Standards, Washington, D. C.

International Union of Chemistry

Alexander Silverman, Univ. of Pittsburgh, Pittsburgh, Pa.

American Association for the Advancement of Science

M. E. Holmes, New York State College of Ceramics, Alfred, N. Y.

International Congress on Glass and Ceramics

J. C. Hostetter, Corning, N. Y.

American Foundrymen's Association

Chairman, L. C. Hewitt, Laclede-Christy Clay Products Co., St. Louis, Mo.
J. L. Lowe, Muskegon Heights, Mich.
G. A. Bole, Ohio State Univ. Engineering Expt. Sta., Columbus, Ohio

---

STRUCTURAL CLAY PRODUCTS RESEARCH FOUNDATION

Fifth Annual Meeting Held in Columbus

Those present at the fifth annual meeting of the Structural Clay Products Research Foundation, held in Columbus, Ohio, March 31, 1936, were as follows: H. C. Kleymeyer, *President;* C. W. Parmelee; A. F. Greaves-Walker, *Chairman,* Structural Clay Products Division; J. L. Carruthers, *Chairman,* Terra Cotta Division; Douglas F. Stevens, *Secretary;* and by invitation, Howells Fréchette, H. R. Straight, and J. W. Whittemore.

Officers and Trustees for the ensuing year, in accordance with the By-Laws, are as follows:

President: Henry C. Kleymeyer, Standard Brick & Tile Corp., Evansville, Ind.
Vice-President: J. L. Carruthers, Ohio State University, Columbus, Ohio; *Chairman,* Terra Cotta Division.
Secretary-Treasurer: Douglas F. Stevens, Acme Brick Co., Danville, Ill.
Hugo Filippi, Illinois Brick Co., Chicago, Ill.
Cullen W. Parmelee, University of Illinois, Urbana, Ill.
H. R. Straight, Straight Engineering Co., Adel, Iowa.
C. Forrest Tefft, The Claycraft Co., Columbus, Ohio.

J. W. Whittemore, Virginia Polytechnic Institute, Blacksburg, Va.; *Chairman*, Structural Clay Products Division.

H. B. DuBois, Consolidated Feldspar Corp., East Liverpool, Ohio; *Chairman*, Materials and Equipment Division.

Members of the Committee on Research Committees are as follows:

Chairman: Cullen W. Parmelee
Secretary: Douglas F. Stevens
Hugo Filippi
H. R. Straight

Ex-officio members of this Committee are Howells Fréchette and G. W. Jarman.

The need for resuming a research program at once and the improvement in economic conditions in the structural clay products industry which will make this possible were discussed. It was recommended that the Committee on Research Committees consider the advisability of sending out a questionnaire to manufacturers of structural clay products and terra cotta to learn the subjects which they consider most in need of research today. Plans are then to be made to resume the research program as soon as possible.

A Research Committee on De-Airing of Stiff-Mud and Dry-Press Structural Clay Products was appointed comprising the following: *Chairman*, R. B. Keplinger, R. K. Hursh, J. W. Whittemore, G. A. Bole, and H. R. Straight.

The Committee on Clay Products Reinforced Masonry is as follows: *Chairman*, Hugo Filippi, and Mr. Nichols, Alton Brick Co., Alton, Ill.

INTERNATIONAL CONGRESS ON GLASS ARRANGES MEETING PLACES

For the meetings in London during the International Congress on Glass to be held in London and Sheffield, England, July 2 to 11, 1936, the rooms of the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C. 2, have been obtained. In the same block a lecture theater belonging to the Electric Light Manufacturers' Assn. may be available. Another large room owned by the Electrical Development Assn. in the same building block may also be used. This will make it possible to carry on all technical activities of the Congress in close contact. In Sheffield it is planned to meet in the University buildings.

NECROLOGY

George Casper Doering Lenth

George C. D. Lenth died May 11, 1936, in Chicago, Ill., of a heart ailment. Mr. Lenth was Secretary of the Clay Products Association.

Born in Garrett, Ind., February 1, 1882, Mr. Lenth received his B.S. degree at Massachusetts Institute of Technology in 1902 and his C.E. degree in 1903.

From 1901 to 1904 he held engineering positions with the Chicago & Northwestern R. R., working on locating, construction, and maintenance in Iowa and Nebraska. For the first nine months of 1905 he was engineer for the Chicago Telephone Co. During 1904 and 1905 he was also engineer with the County Clerk, Cook County, on special investigations.

The following year he became engineer for the city of Chicago, working on bridge repairs. Between 1906 and 1910 he was division engineer in the sewer division for this city. He held the position of Chief Engineer of Sewers during 1910 and 1911.

For the next ten years Mr. Lenth was Assistant Chief Engineer of the Board of Local Improvements. Since 1921 he was consulting engineer and Secretary of the Clay Products Association.

In 1930 he was made a member of the Advisory Subway Engineering Commission of Chicago's subways.

Mr. Lenth contributed to the *Journal of the Western Society of Engineers*, *Engineering News-Record*, and other publications. He was a member of the American Ceramic Society, the American Society for Testing Materials, American Society of Civil Engineers, Western Society of Engineers, Illinois Society of Engineers, and other engineering organizations.

George C. D. Lenth

OFFICIAL PERSONNEL OF DIVISIONS, 1936 to 1937

	Art	Enamel	Glass	Materials and Equipment	Refractories	Structural Clay Products	Terra Cotta	White Wares
Trustee	F. H. Rhead	W. C. Lindemann	J. T. Littleton	G. H. Brown	C. E. Bales	J. L. Child	J. L. Carruthers	P. D. Helser
Chairman	L. E. Barringer	G. H. McIntyre	J. S. Gregorius	H. B. Du Bois	R. E. Birch	J. W. Whittemore	H. E. Davis	S. J. McDowell
Vice-Chairman			A. N. Finn	J. E. Eagle	H. M. Kraner	D. A. Moulton		
Secretary	C. M. Harder	B. J. Sweo	S. R. Scholes	G. F. Metz	N. W. Taylor	E. C. Clemens	D. F. Albery	R. F. Geller
Nominations		T. D. Hartshorn L. C. Athy H. C. Beasley	J. C. Hostetter C. E. Fulton	R. C. Meeker R. B. Carothers	H. E. White R. B. Sosman	A. F. Greaves-Walker R. B. Keplinger	H. D. Callahan R. L. Clare	Edward Schramm
Editorial	R. G. Cowan P. E. Cox H. S. Nash	R. D. Cooke B. A. Rice W. N. Harrison	W. M. Clark R. A. Miller F. W. Preston	B. C. Burgess E. W. Emrich B. B. Josi	R. K. Hursh J. B. Austin J. O. Everhart	G. H. Duncombe, Jr. Howells Fréchette Ellis Lovejoy		R. F. Geller F. P. Hall L. H. Brown
Papers and Program	C. M. Harder	F. R. Porter	A. N. Finn	V. V. Kelsey	S. M. Swain	T. W. Garve		Karl Schwartzwalder G. C. Betz J. W. Hepplewhite
Membership	C. C. Engle	W. V. Knowles	James Bailey	T. H. Sant	H. M. Kraner	D. F. Stevens H. C. Kleymeyer		Robert Twells
Research	F. H. Rhead	W. N. Harrison	B. E. Warren	G. W. Jarman	D. W. Ross	Howells Fréchette		F. H. Riddle
Standards (*a*) Tests (*b*) Products	(*a*) A. E. Baggs (*b*) E. deF. Curtis	(*a*) W. H. Pfeiffer	(*a*) W. C. Taylor (*b*) H. H. Blau	(*a*) G. H. Brown (*b*) C. W. Gerster	(*a*) R. S. Bradley (*b*) E. H. Van Schoick	(*a*) J. O. Everhart (*b*) H. D. Foster		(*a*) and (*b*) A. H. Fessler
Education	Luke Beckerman		W. L. Fabianic	Tom Falknor	N. W. Taylor	A. P. Potts		E. H. Fritz
Data	H. S. Bopp	C. R. Amberg	Herbert Insley	G. R. Swinnerton		F. Heath, Jr.		A. S. Watts
Rules	L. E. Barringer	R. D. Landrum	H. R. Lillie	W. J. Watkins	K. E. Buck	C. F. Tefft		J. R. Beam
Councillors			U. E. Bowes G. W. Morey	C. H. Peddrick, Jr. V. V. Kelsey				T. A. Klinefelter
Management				R. R. Robinson				
Statistics				K. E. Ward				

WILBER STOUT HONORED

Wilber Stout was born at Chester, Meigs County, Ohio, August 21, 1876. He spent his childhood and attended grade school at Sciotoville. Between 1897 and 1899 he taught country school. In 1899 he entered the Department of Ceramic Engineering, Ohio State University, remaining two years. Between 1901 and 1903 he taught school in Scioto County.

In 1903 he was employed as assistant chemist for the Columbus Iron and Steel Co., and in 1904 was made chief chemist. He returned to southern Ohio in 1906 to help build the plant of the South Webster Brick Co., South Webster, Ohio. From 1907 to 1909 he attended Ohio State University. He again joined the Columbus Iron and Steel Co., and in 1910 was placed in charge of laboratory and research problems on blast-furnace slag and refractory ware.

In 1912 he became assistant state geologist. The field seasons of 1912 to 1915 were spent in a study of the geology of southern Ohio, this report being published as Bulletin No. 20. During 1916 and 1917 he studied the geology of Muskingum County, reporting this work in Bulletin No. 21. The following two years were spent largely on clay resources and these results were published in Bulletin No. 26, Coal Formation Clays of Ohio. In 1920 and 1921 Columbiana County was studied, this work being reported in Bulletin No. 28. Three years were then spent in the study of Vinton County. Dr. Stout also helped prepare the map and directory of mineral industries, Bulletin No. 33, and the geologic map of Ohio. From 1925 to 1928 he did field work covering the Monongahela Series of eastern Ohio. The report of this work is not yet completed.

During parts of 1917 and 1918, as a war measure, Dr. Stout served the Federal Government, studying oil and gas reserves.

He was appointed State Geologist in November, 1928. His study of the Lawrence clay of Lawrence County in 1929 and 1930 has been published as Bulletin No. 36. A study of brines, which followed in 1931, is in Bulletin No. 37.

Dr. Stout has a degree in general engineering, Ohio State University, 1914; a professional degree of Ceramic Engineer, 1931; and a D.Sc., Mount Union College, 1936 (see *The Bulletin*, p. 193, May, 1936).

Wilber Stout, who this month received an honorary degree at Mount Union College

He is a Fellow of the American Ceramic Society and the American Association for the Advancement of Science. He is a member of the American Institute of Mining and Metallurgical Engineers, Geological Society of America, Sigma Xi, Natural Gas Association of the United States, and the Ohio, West Virginia, and Indiana Academies of Science. He is a trustee of the Ohio Archeological and Historical Society and a member of the Committee on Geology of the American Ceramic Society.

ROSTER CHANGES DURING MAY*

Personal

ACKERMANN, HUGO, Westfälische Strasse 90, Berlin-Wilmersdorf, Germany. (Bonn, Germany)

AIKEN, GEORGE W., Intermountain Glass Co., Midvale, Utah. (Baltimore, Md.)

DAVIES, WILLIAM T., 19 Canary St., Rochester, N. Y. (Cincinnati, Ohio)

FAY, GORDON C., 1208 Milton Ave., Swissvale, Pa. (Pittsburgh, Pa.)

FINCK, JOSEPH L., J. L. Finck Laboratories, 10 West 47th St., New York, N. Y. (Washington, D. C.)

LAIRD, CHARLES, 711 Wisconsin St., Neodesha, Kansas. (North Birmingham, Ala.)

MALSCH, WERNER, 402 Sixth Ave., Belmar, N. J. (Miami Beach, Fla.)

MORGAN, WILLARD L., 6419 Forest Ave., Hammond, Ind. (Nutley, N. J.)

PARMELEE, CULLEN E., Airtemp-New York Sales Corp., 405 Lexington Ave., New York, N. Y. (St. Louis, Mo.)

SIMPSON, HAROLD E., Mellon Institute, Pittsburgh, Pa. (Columbus, Ohio)

SPENCE, C. FRANKLIN, 90 W. First St., Mansfield, Ohio. (Cleveland, Ohio)

SHIBATA, R., No. 20, Sambancho, Kojimachiku, Tokio, Japan. (Tennoji, Osaka)

STEARNS, WILLIAM F., 1023 Pierce St., S.E., Grand Rapids, Mich. (Osage, Iowa)

UHRMANN, CARL J., JR., Overlook Court, R.R., Bellaire, Ohio. (Ottawa, Ill.)

Student

HAVELL, RICHARD F., 13 Ashland Ave., River Forest, Ill. (University of Illinois)

* Address in parentheses is the old address.

LOCAL SECTION NEWS

BALTIMORE-WASHINGTON SECTION

The May dinner-meeting of the Baltimore-Washington Section of the American Ceramic Society was held at Baltimore, May 23. Anson Hayes, speaker of the evening, discussed "Research in the Iron and Steel Industry."

Dr. Hayes, Director of Research, American Rolling Mill Co., is well known in the ceramic industry through his work on the development of enameling irons.

Prior to Dr. Hayes' talk, a business meeting was held. The Treasurer and W. N. Harrison, Chairman of the Nominating Committee, gave their reports, after which the following officers were elected for the year 1936 to 1937:

Chairman: C. H. Hahner, Washington, D. C.

Vice-Chairman: G. H. Spencer-Strong, Baltimore, Md.

Secretary-Treasurer: G. R. Shelton, Washington, D. C.

At the suggestion of Walter A. Weldon, it was decided that the fall meeting of the Section be held in conjunction with the Art Division of the American Ceramic Society, which is meeting in Baltimore early in October.

At the time of this meeting an exhibition of Persian ceramic ware was on display in the Walters Art Gallery. Members of the Local Section interested in early ceramic ware were invited to view this exhibition.

—G. H. Spencer-Strong, *Secretary*

CALIFORNIA SECTION

At a dinner meeting of the California Section on April 27, George A. Connell, Superintendent of the Wilmington Refinery of the Pacific Coast Borax Company delivered a paper on "The Occurrence and Refining of Borax."

Of particular interest was Mr. Connell's disclosure of how he had been able to forecast the discovery of the new razorite mineral, which has virtually displaced colemanite as a source of borax, many years before the new mineral was found. Mr. Connell presented a demonstration of pure chemical theory which clearly pointed out that such a mineral as razorite should exist.

—Tom Curtis, *Secretary*

CHICAGO SECTION

At a joint meeting of the Chicago Section of the American Ceramic Society and the Physico-Chemical Group, C. E. Hawke, Carborundum Co., Perth Amboy, N. J., spoke on "Physical Characteristics of Refractories." He followed his paper with micro-motion pictures dealing with super-refractory material. Most interesting was that part of the film showing the behavior of refractory materials under the high-temperature microscope, a comparatively new tool for research.

Physical Characteristics of Refractories

In his paper he traced the development of super-refractories, as produced in the electric furnace. The first silicon carbide was accidentally produced in an electric furnace experiment by E. G. Acheson in 1891. Later Acheson became associated with F. J. Tone, now president of Carborundum Co.

Mr. Hawke pointed out the increasing importance of fused cast refractories. Recent work in this field is revealing combinations which have considerable resistance to spalling. There is no universal cast refractory; different chemical and physical characteristics are essential for different uses, just as in the case of bonded refractories.

Under the thermal microscope the changes resulting from conditions of operation can actually be observed as they take place.

CENTRAL OHIO SECTION

H. C. Weller, Surface Combustion Corp., Toledo, Ohio, addressed the Central Ohio Section of the American Ceramic Society, June 2, at Battelle Memorial Institute, Columbus, Ohio. His subject was "Application of Radiant Tube Firing to Ceramics." The sound slide film of the Ferro Enamel Corp. was also presented.

MICHIGAN-NORTHWESTERN OHIO SECTION

The Michigan-Northwestern Ohio Section of the American Ceramic Society held its spring meeting at Jackson, Michigan, on May 22. W. V. Blake, ceramic engineer of the Macklin Company gave a talk on grinding wheels and Russell W. Ehlers, organic chemist of the A C Spark Plug Company, spoke on synthetic thermo-setting resin.

The meeting was followed by an inspection tour through the Macklin Company's grinding wheel plant where newly developed methods of making grinding wheels were shown the members.

About twenty-five members and wives attended the meeting.—Karl Schwartzwalder, *Secretary-Treasurer*

STUDENT BRANCH NEWS

New York State College of Ceramics

The officers of the Student Branch of the American Ceramic Society at New York State College of Ceramics, Alfred, N. Y., have been elected for 1936–1937. They are as follows:

President, Edward Kunzman; *Vice-President,* Robert Skinner; *Secretary,* Robert Doran; and *Treasurer,* Roland Tucker.—Robert Doran, *Secretary*

NOTES AND NEWS FOR CERAMISTS

THIRTIETH ANNIVERSARY OF CERAMIC EDUCATION AT UNIVERSITY OF ILLINOIS

C. W. Rolfe

More than thirty years ago Charles W. Rolfe urged legislative support for a laboratory of economic geology. His efforts found fruition in 1905 when the legislature passed a bill providing for a State Geological Survey and for instruction in ceramic technology. The early history of ceramics at the University of Illinois is given in the *Journal of the American Ceramic Society*, **6** [1] 97 (1923).

A special committee of the Illinois Clay Manufacturers Association is to be credited with securing passage of the act and we are pleased to show here the picture of Frank W. Butterworth, Chairman of that Committee. With him worked William Hammerschmidt, John Stipes, W. D. Gates, A. W. Gates, A. L. Converse, and D. V. Purington.

H. Foster Bain

Frank Butterworth

Much credit must also be given to H. Foster Bain, who was the first Director of the Illinois Geological Survey, for facilities and equipment provided.

The ceramic work was done in two basement rooms of the Natural History Building and in a small kiln house, the brick for which was furnished by Frank W. Butterworth and John Stipes.

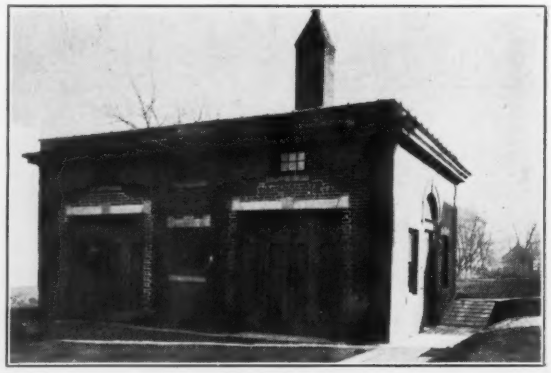
In addition to this small building the Ceramic Department had a two-pole tent pitched where the Physics Building now stands.

The amount appropriated by the legislature was $5000

for the first two years' instruction and research in ceramics. A very great amount of dependence, therefore, had to be placed on financing from the Geological Survey.

With equipment borrowed from other university departments, in these limited quarters, and with one ceramist employed, research work very creditable in amount and character was done, geological reports were written, and quadrangle surveys were completed during those first two years of ceramics at the University of Illinois.

Thirty years of ceramic education and research at the University of Illinois are now history; a history replete with great ceramic contributions, in men trained in facts developed, and in ceramic processes applied.



(Right) View of the Ceramic Building at the University of Illinois in 1905 to 1907

LEON VICTOR SOLON AWARDED CHARLES FERGUS BINNS MEDAL

At the Centenary Convocation at Alfred University, Alfred, N. Y., June 9, Leon Victor Solon, Industrial Councillor, New York, was awarded the Charles Fergus Binns Medal in recognition of his distinguished career and achievements in the field of ceramic art.

In presenting the Medal, M. E. Holmes, Dean of the New York State College of Ceramics, Alfred University, gave the following brief address:

It is fitting to present the Charles Fergus Binns Medal on this occasion celebrating the one hundredth anniversary of the institution which Dr. Binns helped so much to build.

The jury has voted the 1935 award to Leon Victor Solon. Mr. Solon received his art education in England and began there his career as a ceramic artist. He served Mintons, Stoke-on-Trent, as chief designer and art director, reorganized the design and crafts department of Liverpool University, and then engaged in the textile business as a partner of the Wardle Company.

Coming to the United States in 1909, he spent four years as a portrait painter and illustrator and then became art director of the American Encaustic Tiling Company. Then followed retainerships by various organizations which produced such outstanding works of art as the polychrome decorations of the Philadelphia Art Museum. During this time his pen was not idle. Most noteworthy of his writings is "Relativity in Artistic Effects," a masterpiece which reduces artistic expression to its fundamentals.

More recently he has served as officer of various professional societies, Chairman of the newly formed Corroborative Council of six artistic professions in connection with the 1929 World's Fair, and is now President of the New York School of Applied Design. He is also engaged in converting Rockefeller Center into a colored building. By the award of medals to him, his work has been recognized as of the highest type. He has been awarded the gold medal of the American Institute of Architects, gold medal International for decorative painting, principally in ceramics, gold medal Friedsam Fellowship for influence in the development of American decorative art, and gold medal of the Architectural League for design in glass mosaics.

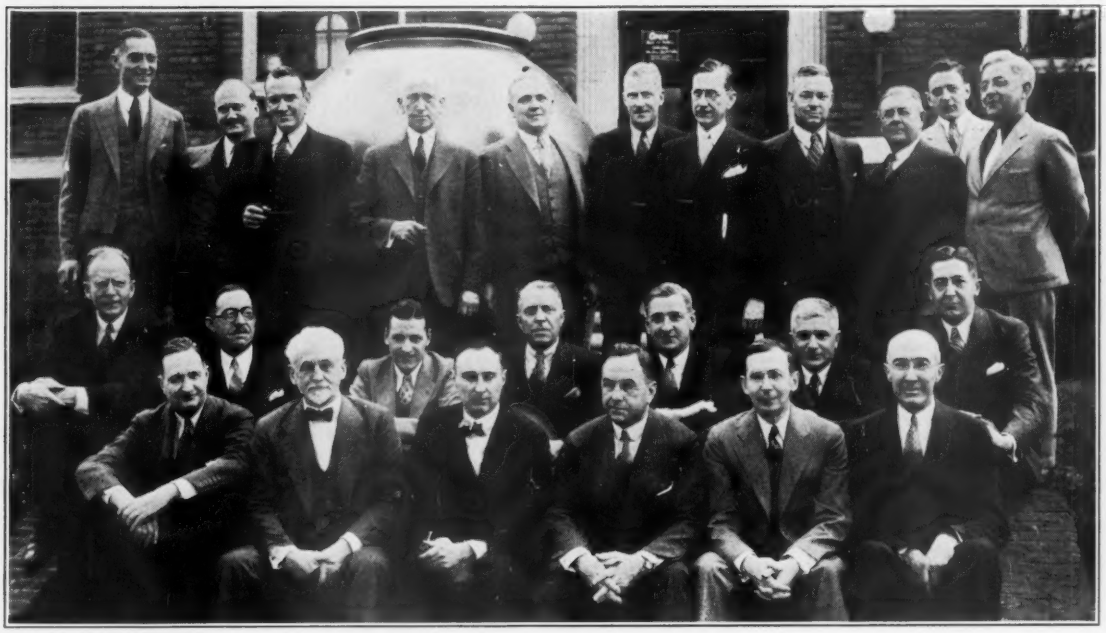
The award of the Charles Fergus Binns Medal on this occasion recognizes and emphasizes specifically the ceramic aspects of Mr. Solon's career and achievements. They have been of the highest order, inspired by distinguished talent and achieved by sincere devotion to the art. They will serve as an everlasting inspiration to future ceramic artists.

Leon V. Solon

American Refractories Institute

The annual meeting of the American Refractories Institute was held May 20 at Columbus, Ohio. The Fire Clay and Silica Refractories, Plastic Refractories, and High-Temperature Mortar Divisions held group meetings.

Frank Piatt was elected President of the Institute and Dorothy Texter Kincaid continues as Secretary.



Ceramists visit Fourth Ceramic Exposition, Rutgers University, New Brunswick, N. J., April 24 to May 3.

Members of the American Ceramic Society and the Ceramic Association of New Jersey assembled on the steps of the Ceramics Building at Rutgers University on "Ceramic Association of New Jersey Day," April 28, 1936, during the Fourth Ceramic Exposition.

In the background may be observed the 740-gallon chemical stoneware jug, manufactured by the General Ceramics Company of Keasby, N. J., which attracted much attention and was one of the features of the nine-day Exposition.

Those in the photograph, reading from left to right are: First row, V. V. Kelsey, Consolidated Feldspar Corp., Trenton, N. J., and President of the Ceramic Association of New Jersey; Ross C. Purdy, Columbus, Ohio, General Secretary of the American Ceramic Society; F. C. Flint, Chief Chemist of the Hazel-Atlas Glass Company, Zanesville, Ohio, and President of the American Ceramic Society; L. E. Barringer, Engineer of Insulations, General Electric Co., Schenectady, N. Y.; G. H. Brown, Director of the Dept. of Ceramics, Rutgers Univ., and Secretary-Treasurer of the Ceramic Assn. of New Jersey; H. P. Humphrey, Washington, N. J.

Second row, John T. Ogden, New York City, Editor of *Glass Industry*; Col. Warren S. Hood, Sales Manager, Kimble Glass Company, Vineland, N. J.; J. R. Kauffman, Dept. of Ceramics, Rutgers Univ.; E. V. Eskesen, President, Federal Seaboard Terra Cotta Corp., New York City; H. F. Kleinfeldt, Vice-President, Abbe Engineering Co., New York City; Charles Brian, Vice-President, Paper Makers Importing Co., Easton, Pa.; P. D. Helser, General Manager, General Ceramics Co., New York City.

Top row standing: G. C. Betz, Ceramic Engineer, Foote Mineral Co., Philadelphia, Pa.; S. J. McDowell, Supt., General Ceramics Co., Keasby, N. J.; Leslie Brown, Ceramic Engineer, Lenox Inc., Trenton, N. J.; F. W. Dinsmore, General Manager, Imperial Porcelain Works, Trenton, N. J.; R. P. Hazelhurst, President, Southern Oil Supply Co., Birmingham, Ala.; W. A. Seger, Ceramic Engineer, Consolidated Feldspar Corp., Trenton, N. J.; R. L. Clare, General Manager, Federal Seaboard Terra Cotta Corp., South Amboy, N. J.; Alfred Mathiasen, General Manager, Matawan Tile Co., Matawan, N. J.; F. R. Valentine, M. D. Valentine Bros. Co., Woodbridge, N. J.; G. T. Faust, Dept. of Ceramics, Rutgers Univ.; and Fred Sutterlin, Vice-President, Scammell China Co., Trenton, N. J.

Cleveland School of Art

A course in pottery is offered in the Summer Session of the Cleveland School of Art, to be held from June 22 to July 31, 1936. Building and casting forms, decorating with slips, incising and embossing, glaze study, glaze and underglaze decoration, inlaying, piercing, and graffito, stacking and firing the kiln, and ceramic design are included in the course.

Glass Institute Formed

The Pittsburgh Glass Institute, 30 Rockefeller Plaza, New York, N. Y., has been formed to furnish authoritative information on the uses of glass as a construction and decorative material. E. L. Patton, is director of the institute. The Institute plans to assemble and coördinate all available data on the uses and applications of glass that have been developed through modern manufacture.

University of Illinois

Enamel Symposium

Eighty delegates attended the Second Enamel Symposium held May 9. Eight states and thirty firms interested in porcelain enameling were represented.

Research Work at the University

A. I. Andrews reported on research work in enamels now carried on at the University of Illinois. The development of a nonfritted ground coat, determination of weight losses and progress of solution of batch materials during smelting, and a microscopic study of the formation of copperheads were discussed. A micro-moving picture showing the actual formation of copperheads during firing illustrated this last paper.

Review of Symposium Papers

Kurt R. Groener, Porcelain Enamel Institute, explained the aims and accomplishments of the Institute, describing the advertising campaign and store demonstrations staged by its educational bureau.

W. G. Martin, A. O. Smith Corp., presented a paper on "The Blasting of Sheet Steel in Preparation for Enameling," illustrated with photomicrographs showing the effect of the size and kind of abrasive used and the effect of nozzle pressure. The necessary conditions for most economical and effective sandblasting were summarized.

G. H. McIntyre, Ferro Enamel Corp., explained the latest control methods of the enameling process. Control methods are important in present-day high-efficiency production.

H. D. Carter outlined the steps in the control of mottling of grayware, giving data of practical importance to the grayware manufacturer. The equipment and methods used at the Canton Stamping and Enameling Co., were described, using charts and samples.

C. A. Wulf, American Valve and Enameling Co., discussed the development and applications of the screen process for decoration of enamelware. Samples and a replica of the equipment for the process were shown. Mr. Wulf presented a large enameled picture to the Department of Ceramic Engineering.

The above picture was taken of those attending the Enamel Symposium held by the Department of Ceramic Engineering University of Illinois, Urbana, Ill., May 9.

Front Row: B. T. Sweely, J. R. Crandall, E. G. Oesterle, H. Y. Oesterle, W. F. Wenning, E. R. Brauner, K. G. Strong, A. L. Vodicka, W. H. Duvall, A. A. Yarte, W. W. Coffeen, H. A. Schwartz, W. J. Plankenhorn.

Second Row: C. W. Parmelee, J. Hrabovsky, J. W. Thornton, C. N. Field, C. K. Keller, J. W. Freeman, Roy H. Jaeger, J. P. Magos, F. R. Venton, L. Stoyke, J. C. Vollrath, W. O. Gaumer.

Third Row: N. P. Alessi, S. Boyle, E. P. Czolgos, G. Sirovy, Sr., R. Oesterle, F. E. Hodek, Jr., E. C. Aydelott, F. R. Porter, J. H. Norse, W. Wright, C. B. Clark, L. F. Gulley, H. Palsgrae.

Fourth Row: R. E. Bevis, G. H. McIntyre, G. Sirovy, Jr., H. V. Kaeppel, W. H. Shipman, R. L. Fellows, D. W. Armstrong, W. H. Pfeiffer, F. J. Hodnick, W. C. Pittman, W. Hayes, H. D. Carter, F. L. Meacham, R. S. Sheldon, F. A. Petersen, W. A. Fairlie.

Fifth Row: J. A. Thompson, B. W. King, R. B. Goble, J. M. Lange, H. H. Holscher, W. R. Morgan, W. Keith, J. J. Canfield, C. M. Andrews, T. E. Spires, L. A. Trabert, L. A. Spires, J. Stevens, G. A. Foehse, J. W. Hull, K. R. Groener, W. G. Martin, A. I. Andrews, W. P. Charbonnier, H. D. Chase.

Sixth Row: M. M. Miller, F. W. C. Hutchison, R. W. Cline, F. Hummel.

The following students are listed above: W. P. Alessi, S. Boyle, C. B. Clark, R. W. Cline, W. P. Charbonnier, F. Hummel, F. W. C. Hutchison, M. M. Miller, B. W. King, F. A. Petersen, W. C. Pittman, F. R. Porter, L. A. Spires, T. E. Spires, H. A. Schwartz, R. S. Sheldon, J. Stevens, L. Stoyke.

COMMUNICATIONS—CERAMIC HISTORY

CERAMIC ART AT OHIO STATE UNIVERSITY*

By the Department of Fine Arts, Ohio State University

Introduction

In any consideration of the development of ceramic education in America, the names of two outstanding men immediately present themselves: Edward Orton, Jr., and Charles Fergus Binns. In 1894, Edward Orton, Jr., established the Ceramic Engineering Department at Ohio State University, the first venture in ceramic education in this country and the first in the world having collegiate degree courses of study.

Ceramic Art Training in New York

In 1900 Charles F. Binns was made the Director of the New York State School of Clay Working and Ceramics at Alfred University. In addition to specialization in engineering, ceramic art courses were offered at Alfred to students who wished to major in the design and craftsmanship of actual ware making. Engineers and craftsmen were trained side by side with mutual benefit, their curricula differing rather widely in the emphasis placed on some subjects but all acquiring certain ceramic fundamentals. This was a studied and just combination of the ceramic craft schools of Europe and the strictly ceramic technology school as established by Professor Orton at Ohio State University.

That the combination of ceramic technology and ceramic art as established by Dr. Binns at Alfred was sound in principle and practice is shown by the great number of men and women of recognized achievement trained at Alfred. Some of the finest potters and the most noteworthy ceramic art teachers in America are those whose ideas were molded and guided by Dr. Binns, as were some of our most prominent ceramic engineers.

Ceramic Training in Ohio

At Ohio State University specialized training in ceramic product making was not included in the original program, nor is it offered today as a part of the engineering curriculum. Those in charge of the Department of Ceramic Engineering believe now, as then, that four years is all too short a time in which to present either engineering fundamentals or a sound training in the art and skill of product making.

Producers of all sorts of merchandise in which form, finish, and decoration are essential qualities have realized that technical and engineering progress alone will not enable them to keep the pace in a highly competitive

Vase and plate by Edgar Littlefield

market. Makers of clay, glass, and enameled metal ware also realize this. Artists who know ceramic materials and processes, who can conceive attractive products, and who can design and compound ware to meet particular requirements are much needed.

Degree Courses in Ceramic Art

To train able designers to meet the requirements of the ceramic industries, a new ceramic educational venture was initiated at Ohio State University in 1927, although laboratory work did not start until January, 1929.

In 1923 Ross C. Purdy, General Secretary of the American Ceramic Society, began the campaign to organize an Ohio Ceramic Industries Association. He proposed a program of research and education at Ohio State University, featuring the establishment of laboratories and degree courses in ceramic art as one of the most important items. Even before the Ohio Ceramic Industries Association was formally organized, Mr. Purdy had enlisted the support of ceramic industrialists and university officials for a ceramic art department. With George W. Rightmire, President of Ohio State University, George Arps, Dean of the College of Education, and James R. Hopkins, Chairman of the Department of Fine Arts, urging and guiding, the faculty committees finally submitted a plan which was approved by the general faculty and Trustees of the University. When the Ohio Ceramic

* This article was suggested by the Editor of *The Bulletin* and is the work of the staff of the Department of Fine Arts, Ohio State University. Received April 30, 1936.

Industries Association was organized, the Division of Ceramic Art in the Department of Fine Arts was given unanimous and vigorous support.

Laboratories and workshops were completely equipped for practical work in the important clayware production processes. Courses of study were planned to give students a basic foundation in drawing, modeling, design, art history, English, and chemistry, together with fundamental courses in ceramic technology and extensive laboratory work in the actual making of ware, from the composition of bodies, glazes, and colors through the craftsmanship of forming and decorating processes to the finished article.

An able student, after four years of these activities, will gain a knowledge of and a feeling for his craft which will enable him to think and design in terms of ceramic materials, processes, and fire, and to meet definite requirements and specifications. If he has exceptional talent he can relate his basic knowledge to factory demands and conditions with more speed and efficiency than can a student of equal talent who has received only unspecialized art training. Where design and decoration as well as special ware qualities are demanded, he can conceive and produce more readily than can a student equipped with training only in ceramic technology.

There seems to be a need for several different types of persons who can profitably use collegiate training in ceramic art. Not all students become first-rate industrial designers. Only the outstanding few can aspire to high rank as creative artists. But other related fields are open to trained, industrious ceramic art workers. Many factories can use glaze, color, and process technicians;

Low fire tableware by Eleanor Day

Part of a dinnerware set designed and executed by Amelia Littlefield; the ware has a body of red brick clay and a mat glaze

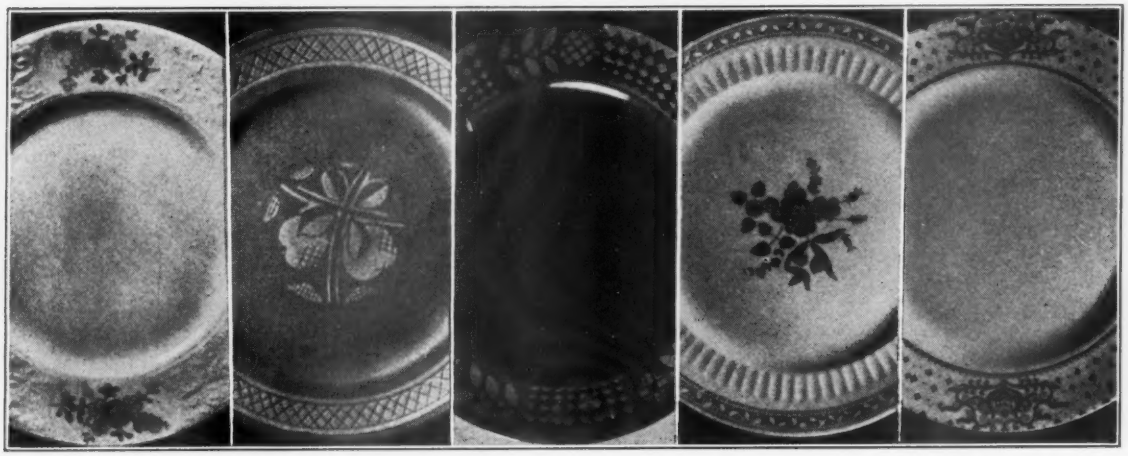


Plate designs made in the Ceramic Art Laboratory by Paul Bogatay

small studio plants attract the craftsman whose preference is to produce with his own hands rather than to design for quantity production; the field of merchandising ceramic products can use salesmen and buyers who have a background of training in ceramic art; teachers of elementary ceramics in public and private schools are increasingly in demand.

The Ceramic Art Staff

Arthur Baggs

The control of the department was entrusted to Arthur E. Baggs. As a pupil of Dr. Binns, he was well grounded technically and artistically. The training which he received at Alfred was later supplemented by two year's study at the Art Student's League in New York City. At that time Mr. Baggs conceived the idea of the Marblehead Pottery, which later became well known. He relinquished part of his time at the pottery during the six succeeding winters to teach at the Ethical Culture High School in New York City. In 1925 he became affiliated with Guy Cowan and remained in Cleveland for the three years preceding his appointment at Ohio State University. During his last year with the Cowan Pottery he taught at the Cleveland Art School.

Mr. Baggs presents himself with no display. Humility and kindliness are among his chief characteristics. His impartiality, sympathetic understanding, open-mindedness, and patience promote confidence in his students and dispel the self-consciousness which so often is a barrier to the production of creative work. Students respond to his attitude with little adjustment and soon develop the self-confidence which their craft demands. Mr. Baggs is a man of great tolerance and has the patience to learn one thing at a time, allowing time for what he has consciously acquired to become an unconscious habit of mind and hand. This, through association, he imparts to his students.

Jug and drinking cups by George Fetzer

Edgar Littlefield

In the fall of 1929, Edgar Littlefield, a graduate ceramic engineer of Ohio State University, was added to the staff. In Mr. Littlefield is found the rare combination of a keen mathematical mind and a deep feeling for sensuous form and color. By constant experiment and research he continually adds to his fund of knowledge. And his insatiable curiosity, coupled with an intelligent determination to realize his conception, makes him an excellent guide for students in search of technical information.

Mr. Littlefield's creative work also serves to stimulate the students. The influence of Mr. Littlefield's pottery in the development of student taste is most important. This unusual talent has not gone unrecognized; on two occasions his work has been awarded the first prize in the nationally important Robineau Memorial Ceramic Exhibition, sponsored by The American Ceramic Society.

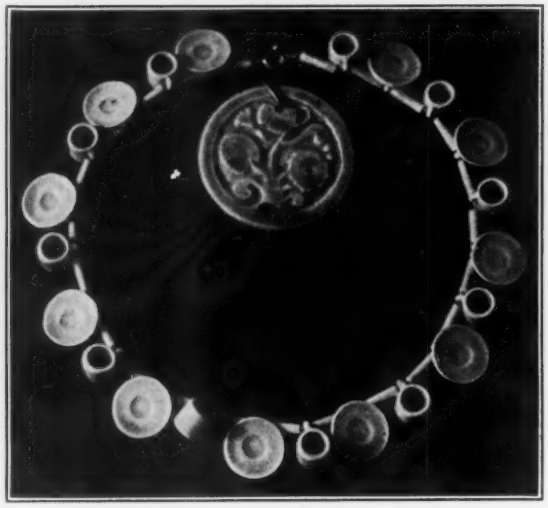
Carlton Atherton

Carlton Atherton of Syracuse University, a pupil of Adelaide Alsop Robineau and later her teaching associate at that University, came to this department in 1930. Mr. Atherton is in charge of the courses in ceramic design and history. These courses are planned to develop the students' awareness of form, to enlarge their perception of the fitness of ornament, and to develop an appreciation and respect for the possibilities inherent in the nature of clay.

Margaret Steenrod

Margaret Steenrod joined the staff in 1934 as a general aide to the students in the laboratories. A graduate of the department in which she now teaches, Miss Steenrod's familiarity with the situation through long association, coupled with her understanding, have made her invaluable in drawing together all the phases of student activity in the ceramic field.

Miss Steenrod's particular interests lie in the difficult "gombrun" decoration and the field of miniature pottery, yet her technical skill at no time imposes itself upon the observer or intrudes itself on the material. The dominant element in her work is that intuitive rightness which characterizes Persian ornament, although it does not derive from any historic period.



Ceramic necklace and medallion made by Margaret Steenrod

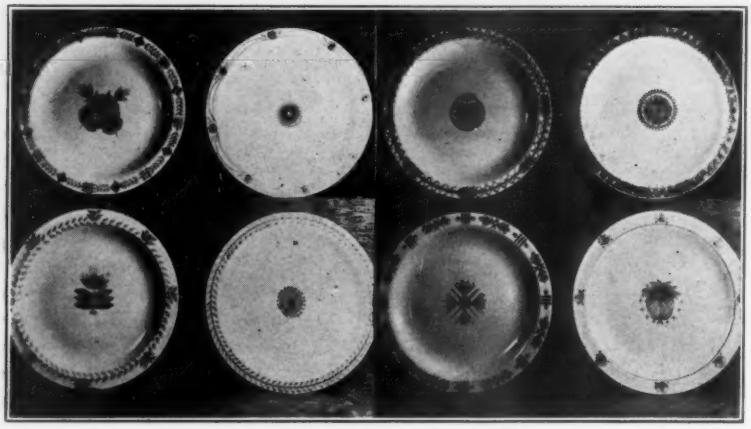
The Students of Ceramic Art

In the Winter Quarter of 1929 a few students began working in the ceramic art laboratories at Ohio State University. Interest in the department has grown steadily until at present the laboratory space and equipment are inadequate for the demands upon them. The student group is made up of persons who are studying Ceramic Art with several different objectives. Some are enrolled in the regular four-year course and are looking forward to professional careers in ceramics as designers, craftsmen, technicians, salesmen, or teachers. Others are taking one or several ceramic art courses as electives to supplement their general training in other lines. Many students majoring in Art Education, Practical Arts, or Ceramic Engineering find these courses useful extensions of their general fields of study. Other students elect the courses as additions to general cultural background or as a foundation for future leisure activities. Such a diverse student personnel makes it necessary to use considerable variety and individual consideration in the presentation of instructional material. As far as he is able to do so, each student is encouraged to work out his own salvation, to get what he wants and needs by taking part in some and observing others of the activities which are constantly going on in an atmosphere of organized industry.

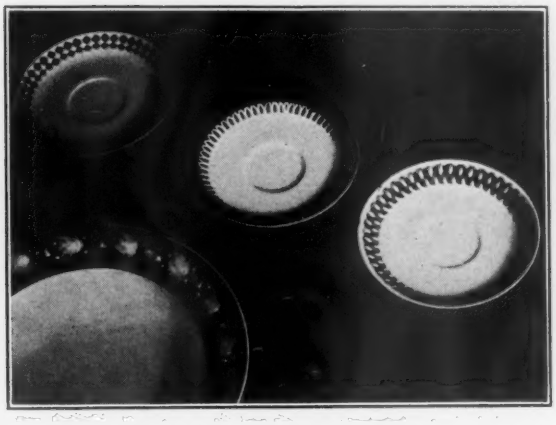
The Ceramic Art Instruction

The basic working plan of the Ceramic Art laboratories has been somewhat like that of the old guild workshops. Instructors are not only helping students with their problems but are producing finished work of their own. Students learn from observation perhaps more than from formal instruction. Interesting experimental developments by instructors or students are open and available to the common fund of growing information. "Secrets," "private glazes," etc., are practically unknown in this community of potters, who seem quite content to share whatever is discovered and thereby avoid many of the petty jealousies which sometimes flourish in such groups.

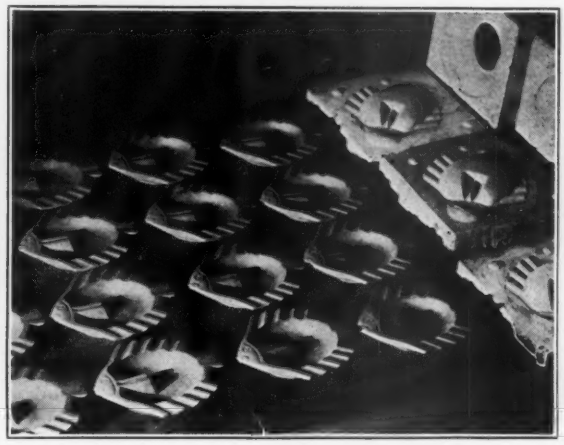
In general the aims of the department have been these: to expose the student as thoroughly as possible to the fascination of ceramics in all its varied phases and endless possibilities; to furnish a well-equipped shop in which he can go as far as he will in the pursuit of knowledge and skill through actual creation of products from the raw materials; to aid him by certain informative courses in the history and technology of ceramics



Plates designed by Paul Bogatay



Low-fire tableware with underglaze decorations in bright colors; experimental work carried out under the supervision of Arthur Baggs



Ash trays and molds designed by Edgar Littlefield

and by fundamental art courses; always to provide help from instructors when needed, but to encourage initiative through independent planning and development of individual problems rather than to carry each student through the same specified routine.

This somewhat informal policy has worked well in many cases and has, as is to be expected, failed in others. The opinion is held that only those persons should choose ceramics as a career who are intensely interested in it. There is a doubt as to the ultimate success of a student in any specialized field who simply performs a required set of activities with course-passing efficiency but fails to get so enthusiastic about his subject that he wants to do far more than minimum requirements.

It is quite possible that the casual, indifferent student would accomplish more under a definite detailed, specifically prescribed system of things which he must do one after the other. But the student who is thoroughly convinced of the value of his chosen field progresses very well under a less restricted program, and he may develop more initiative, responsibility, and creative imagination than if his tasks were all a part of a set routine. Considerable variation in the programs of individual students is permitted in the effort to give to each the things most needed and to develop each along the lines of his major abilities. One student with an experimental bent may be encouraged to give three times as much attention to glaze and color development work as does the average student. Another who seems to have real creative design ability may be allowed to spend only a minimum of time on glaze experiments and to give extra time to special design study. A promising modeler may be allowed to learn much of his fundamental ceramics by producing ceramic sculpture, if he can do that with greater enjoyment than he would get from throwing pots on the wheel or jiggering plates.

After all, one can learn how to handle clay and glazes and fire, how to create and combine good forms and colors, how to evaluate true and honest ceramic quality, by traveling several quite varied paths of study and practice all leading, through related though not identical experiences, to about the same total of basic ceramic knowledge and taste. All that a college course in ceramic art can be expected to give to a student is a sound foundation on which to build as later experiences and opportunities come to him. At graduation he is not a finished designer, craftsman, or technician. But if he has acquired a real enthusiasm and respect for his chosen profession, a basic knowledge of materials and processes, a growing skill in drawing, modeling, and design, and at least the beginning of a critical faculty which will help him to choose the best from his own or others' work, he is ready to start.

Many varied ceramic projects are constantly going forward as special studies by individual students or groups or instructors. Experimental work is heartily encouraged. As long as useful knowledge and experience in regard to the behavior of materials seems likely to result, the student is urged to "try it out and see what happens." The accepted and proved types of bodies, glazes, and processes are taught to the student as safe and standard procedure, but explorations away from the beaten track are frequently made, sometimes with results which open interesting possibilities for further work. The feeling that one is exploring, inventing something, is tremendously provocative and exciting; and it is believed that alert-mindedness looking for new things to try in materials, processes, or design ideas is a desirable quality to encourage in a student.

Sculpture made in the Fine Arts Department, Ohio State University, using a sculptor's clay prepared by Arthur Baggs

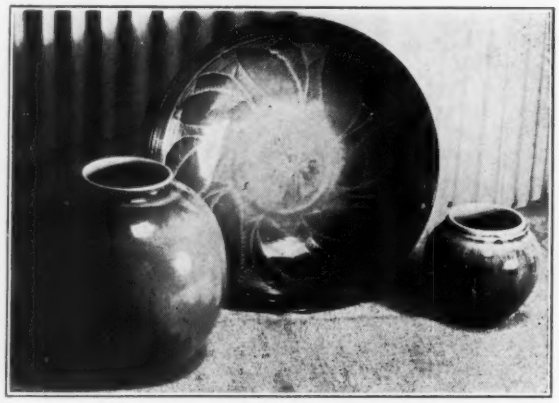
A few developments of the sort referred to are outlined briefly: self-glazing bodies, low-fire white bodies translucent and otherwise, high talc bodies, sculpture bodies, low-fire underglaze reds, etc., one-fire

gold, copper reds from SiC, modified slip glazes, tableware from red brick clays, historical research and analysis, and tableware design.

Results

The graduates of the Department are working in many phases of the field. A pottery which produces decorative ware has as its art supervisor one of the graduates. Another former student has developed a small but flourishing pottery of his own and has organized a series of classes in connection with the plant. One of the large glass manufacturers employs a graduate in the design department. A graduate ceramic engineer working in the Ceramic Art Department has perfected photographic relief processes which offer new and promising decorative possibilities in the tableware industry. The research in tableware design, sponsored by the Rockefeller Foundation was carried out in the Department. Some of the graduates are teachers; others have workshops where they ply their craft. Perhaps one of the most encouraging and gratifying things to those in charge of the Department is that none of the graduates is unemployed.

Division of Ceramic Art, Dept. of Fine Arts
Ohio State University
Columbus, Ohio



Two vases in porcelain and a bowl in high-fired stoneware by George Fetzer

LAWRENCE SAINT'S STAINED GLASS CREED*

As there has been a great deal of discussion upon the subject of stained glass for some time, it seemed to me essential that I clear my own mind by writing out a "creed." I feel that it is wise to share this with those who are deeply interested in seeing windows of a higher standard in the churches and cathedrals of America. I earnestly ask a careful reading of this material by those who receive it, in the hope that it may help toward a better understanding of stained glass.

I believe that:

Tone

Stained glass in church or cathedral interior, to have the best effect, must have an established color tone, rich but not too dark.

Scale

It is also necessary to have an established scale for the figures. In the lower parts of the church or cathedral all of the figures should be rather small in scale and in the clerestory and parts far away from the eye they should be quite bold, following the precedent set by places like Chartres and León. Rose windows are an exception.

White Windows

Windows comparatively light, such as those of the 15th Century, jump out of the walls, so to speak, and keep the building from looking vast and grand. They fail to stir the emotions as do windows of richer color.

A Successful Result

A cathedral or church can not fail to have a spiritual feeling of bigness and wonder if these three fundamental principles are deliberately carried out.

Possible Failure and Danger

In contrast, if in a window the figures too quickly or suddenly change from large to small, the result is mediocre.

A church or cathedral interior in which the windows jump too quickly from light to dark makes serious readjustments to the vision necessary. Such an interior, therefore, lacks repose and fails to give the feeling of wonder and majesty. The failure of the general effect in many churches is due to these faults, and such churches are, in a sense, museums exhibiting different styles of stained glass and do not awaken the proper spirit of reverence and devotion in the worshipper.

Sources of Inspiration

The windows in a cathedral or church should be inspired by Our Lord, Jesus Christ, for whose glory it was built, and the light and life which ought to be in the windows should come from one who has the light and through one who is obedient to that life and light. The failure of much of the stained glass in our churches is due to commercialism among stained glass artists who may have little or no sympathetic understanding of its sacred subject matter.

The Question of Light

Windows were originally made and still ought to be made to admit light. When windows are so dark that one has, on ordinary days, to light up the interior, they fail in one of their very important functions. The *light* in churches should not be like the light in offices or factories but, through the marvelous influences of color, should be softened and quieted so as to have a different effect upon the emotions. No matter how light-admitting windows are, however, there are some days on which artificial lights have to be used. Windows should be made

* Preprinted for the Annual Meeting, American Ceramic Society, Columbus, Ohio, March 29–April 4, 1936. Received March 9, 1936. (Copyright by Lawrence Saint, 1936.)

in such a way that they will be satisfactory on ordinary days.

Change of Attitude

In 1910 I felt that 14th Century stained glass, combining color and white, was what America needed, but I have come to the conclusion that it is almost impossible to get the best color effects with any large proportion of what I call greenish whites.

Color and Light at León

A reasonable amount of light and color can be gained by reducing to a minimum the amount of leading and filming and by the use of a reasonable amount of yellows and reds, flesh tones, and whites in about the following proportions, in which they appear in the window I copied in León Cathedral, León, Spain:

	(%)		(%)
Blue	23.5	Green	10.80
Red	23.2	Purple-brown	7.85
Yellow	16.0	Flesh	3.00
White	12.4	Iron-work and error	3.25

(Lead area not calculated)

Churches Too Dark or Too Light

A church so dark that one has to stumble around does not express Christianity; nor does an interior which is too bright give the "dim religious light" which is necessary for meditation and real worship and the registering of the deeper things of the soul.

Subject Matter

The subject matter of church windows should be definitely related to Christianity. My preference is for subjects taken from the Bible.

Coöperation of Theologians with Designers

Those who choose the subject matter of a window should work in conjunction with the designer for the best results. Where subjects are too complicated the message fails, and *some subjects do not adapt themselves at all to certain types of windows.*

Treatment of Subjects

In a series of narrow lancets forming one window, the subject matter should not be carried across the lancets as is frequently done in the objectionable naturalistic picture type of window. This sort of thing fights the spirit of the architecture. Each lancet should be complete in itself for the best results.

There are places where medallions give a fine effect and other places where single figures look best.

Importance of the Architect

The architect who designs any church naturally has the "feel" of the building and usually has definite ideas as to the relation of the windows to the architecture. Even though a building may be complete and the architectural work finished, church authorities, in putting in new windows, would do well to avail themselves of an architect's advice as to the proper artist to do the windows and of his criticism of the designs from the standpoint of scale and architectural appropriateness. Witness the tragedy in many churches where church committees without the help of such advice have ruined interiors through buying windows which disregard style and scale.

A Competitive Evil

Churches desiring stained glass should not have several artists or firms make *unpaid* designs. It is most injurious to both. The artists have to retrieve their losses by taking work out of future windows. The churches therefore lose in the end. Artists should be selected on the basis of work previously executed.

Gothic Christian

Gothic architecture is preëminently a definitely Christian expression, and heathen types of figures or ornament, such as Greek or Egyptian, can not be combined with it in the windows without weakening the devotional spirit of the Gothic.

Conformity to Architecture

Stone mullions should never be removed from any window to accommodate any stained-glass subjects; the stained glass should fit into the architecture, in harmony with it and growing out of it. Every detail does not have to be in exact harmony with the architecture, but there should be no fighting between the ornament in a stained-glass window and the architecture, in movement, rhythm, or mass.

Color

Color is the most striking and therefore the most important thing about stained glass. As the window is always the lightest area in a church, it *commands* the attention. One can not resist looking at it. Especially is this so in colorful windows.

Color is like music. It is a very sensitive medium of expression. Because of this sensitiveness it can be either devotional and reverent or merely pagan.

The color expression of Christian emotions is of a certain conservative type and certain combinations of colors produce emotions in harmony with Christian thought and feeling.

Upon entering a cathedral or church, one should feel an uplifting spirit of wonder; he should feel, as it were, a touch of Heaven and a greater nearness to Our Lord as the colorful windows speak to his spirit.

Brilliance, glory, and light are found most often in the middle register of color tones. A combination of selected tones of the primary colors with small amounts of secondary and tertiary or neutral colors is best adapted for the expression of Christian feeling. To make colors harmonize, each color must yield up some of its nature to the others that surround it: red with a little blue and yellow, blue with a little red and yellow, yellow with a little red and blue. We all enjoy such colors in the skins of ripe bananas, Tokay grapes, and apples. Every good color must have in it this three-color idea. This is the principle of color harmony in the great windows of the medieval period, in fine rugs, great paintings, and in every worthy work of art in all ages and countries. To get harmony of color and tonal shades of color takes most careful artistic judgment, and it takes time and

repeated inspection, with the registering of reactions, to determine whether or not colors are in perfect harmony.

Area

Where both light and color are demanded in a church or cathedral interior, it is essential that the area of glass be rather large in proportion to the stone work. In Chartres the window area is comparatively small, the windows are dark, and a rather dark interior results. In León the window-space is large, the windows colorful, and the interior is not dark.

Indispensable Essentials

Aside from spiritual inspiration it takes three things to make a great window: talent, time, and money. Everyone of these three is absolutely essential. If there is money and time but no talent, or time and talent but no money, or money and talent with no time, there is failure.

Sources of Inspiration

For the finest results, every stained-glass artist must have high ideals which can be definitely inspired and quickened by the study occasionally of the great masterpieces in stained glass of the past.

The west windows of Chartres are generally accepted from every standpoint as the greatest masterpieces that the world has ever seen: from the standpoint of scale, architectural fitness, message, color tonality, relationship to one another, and style of drawing for stained glass. Beside these stand the finest windows in the clerestory choir in the cathedral of León, Spain, and the more I study the sketch I made of the finest window there, the more I admire the fine artistic beauty of the color and the dignity and devotional spirit in the design and arrangement. The general color effects here are expressive of the American spirit of optimism as well as of the warmth, love, and kindliness of the faith of Our Lord, Jesus Christ.

The Crucifixion window of Poitiers is also a great masterpiece. The colors are brilliant and glorious without being garish or unpleasant. It has a spiritually thrilling quality and a vital Christian message. There are effects in the windows of the north choir aisle of Canterbury Cathedral which are superior, and the glass painting with its fine conventionalization and character drawing is worthy of the most careful study. Such study is made easy by the position of the windows which are near the eye. This style seems to be the same as at Poitiers.

Storied Windows

The windows of Chartres were made for an age when windows were the picturesque and colorful Bible of the people, "Storied windows richly dight," from which the priests, we are told, pointed out the lessons from Bible scenes and the lives of the Saints. León as well as Chartres has medallion subjects.

Craftsmanship

The craftsmanship principles of the Middle Ages are absolutely safe to follow. Only the most enduring materials were used in the construction of a window. The iron used to subdivide the weight of the window is practically rustless because of its silica content and has remained unchanged for centuries. The lead, which contains tin to make it strong, was made with narrow heart and heavy flanges to give the windows greater strength. The irregular thickness of the glass bends the light rays and otherwise effects subtle changes in color tones. The paint and half-tone filming (which I succeeded in approximating after many experiments while working as one of the artists on the Bryn Athyn Cathedral under Raymond Pitcairn, Esq.) is warm, translucent, and lasting.

No window should have a single piece of double-glazing, and no windows should have house paint put on them, after they are made, to deepen their tone or change the colors. When it is first made, a window should not be filled with a multitude of leads to imitate a window several hundred years old. The great number of leads in ancient windows has resulted from repairing and reglazing.

Lead and Iron

Generally, leads not wider than those of the Middle Ages should be used, usually three-sixteenths inch. It is beneath the standards of high craftsmanship to use leads an inch or more wide to imitate iron work and it is best to use secondary supporting irons, about three-eighths inch square for general use.

Firing of Paint

Paint should be fired on slowly and thoroughly in a muffle kiln, and the glass should cool down naturally without being suddenly changed to cooler chambers.

System Used in America

The use of black or red glass-paint for filming a window is deadly to its glow and life.

Texture

In producing a texture the effect of aging in old windows is safe to follow. It is by no means the best policy, however, to film a new window as heavily as an old window is filmed after it has been pitted and corroded by centuries of time.

A window should be made for certain definite light conditions, such as the sunless north side or the sunlight of the southern exposure. A window made to stand the sun would not look equally well where it would get no sun and where it would have only a cool sky behind it.

Drawing

Figures should be drawn in natural or possible attitudes; they should have grace and beauty of pattern shapes and rhythm of line work.

Figures should have as much naturalism as is consistent with the stained-glass art; that is to say, the faces should not be photographic but what we call the bas-relief type. This has been accomplished in stained glass by the use of lines of different depths of tone, of different widths, and by tapering lines usually to fine points.

More character or a different kind of character in the faces should be aimed at than is found usually even in most of the finest windows of ancient times. It is also my aim to get as much expression in an individual attitude as possible without sacrificing the strength necessary to make it carry well.

For me, at least, it is best to draw from real life characters whose lives are as nearly as possible like those in

the Bible to enrich the message and add intellectual interest. To go too far in the direction of naturalism, however, is dangerous. Stained glass became a lost art partly through the effort of glass-painters to imitate painters of easel-pictures and by the introduction of perspective. I consider the drawing and treatment of the Canterbury north choir aisle windows so good as to make them the safest models in the world to follow. A great master glass-painter painted these windows and the heads are more satisfactory than any I know.

Exaggerations

Certain exaggerations are necessary in stained glass, such as making the feet smaller and making allowances for the lead lines which surround the figures.

Silhouettes and Angularity

For the best effects in windows, figures have to be drawn in a very simple, angular way. The outlines or silhouettes must be comparatively simple.

Drawing Looks Weaker in Place Than in Studio

The drawings for fine stained glass as they appear on paper may have a severe, stiff, unattractive look, but when the windows made from the same drawings are in place beside beautiful stone mullions and bold architectural forms they become softer and less severe by comparison.

Patterns of Color

A window should be designed to look right from the location from which it is most often seen; from the very first thoughts of the window, the color should be considered; the patterns of color should be worked out in the initial stages of the design, and faces, drapery lines, and everything else must be secondary to the big plan of color which assures the success of a window.

Conclusions

It is absolutely essential, for the best results, that an artist know from whom he is to get his final directions and that those having various opinions on any work under consideration be present when the final opinions are given. It makes for confusion for an artist to receive a set of directions and later have persons in positions of influence express to him divergent views.

The unusual opportunity afforded me by nearly eight years of service to Washington Cathedral have brought about experiences which have crystallized into many of the above convictions.

HUNTINGDON VALLEY, PA.

Student Branch of the American Ceramic Society at New York State College of Ceramics, Alfred, N. Y.

CELO KYANITE
UNIFORM QUALITY DEPENDABLE SUPPLY
FOR INFORMATION AND SAMPLES WRITE TO
CELO MINES, INCORPORATED
BURNSVILLE, NORTH CAROLINA

CERAMIC GRADUATES OF 1936

Your *Class Room Days* are over
Your Compulsory Technical Reading is at an End

BUT . . .

Your *Education* is Only *Beginning*

The American Ceramic Society offers you new educational tools to replace professors, classrooms, and libraries

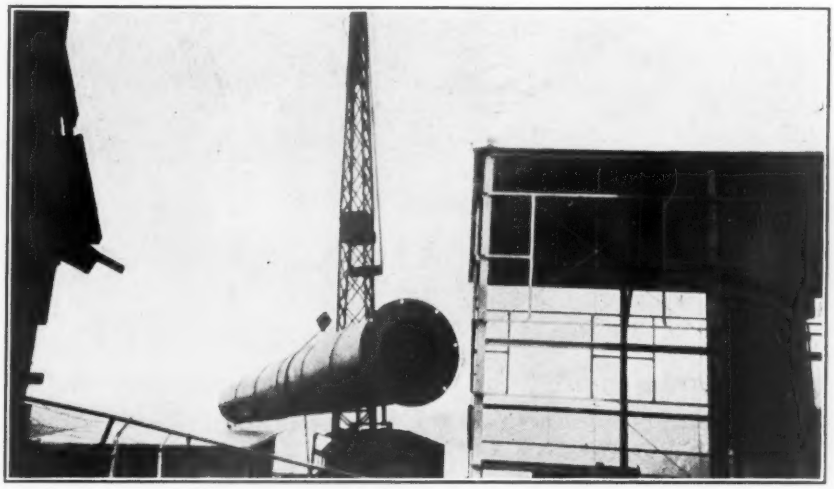
Until June, 1937, you may continue your Student Membership and your technical studies for $5.00 by reading

(*1*) *The Journal of the American Ceramic Society*
(*2*) *Ceramic Abstracts*
(*3*) *The Bulletin*

Let your new employer know that your studies are being continued through this means

THE AMERICAN CERAMIC SOCIETY
2525 NORTH HIGH STREET, COLUMBUS, OHIO

Simplex never sacrifices fine engineering and workmanship to gain a temporary price advantage.



The long run satisfaction given by Simplex engineering methods insures maximum efficiency per dollar invested.

SIMPLEX
ENGINEERING COMPANY

WASHINGTON TRUST BLDG. • WASHINGTON, PENN., U.S.A.

Glass Melting Tanks and Furnaces for Every Type of Glass Manufactured • Glass Bending Ovens, Glass Decorating Machines • Luminous Ports That Give Excellent Control • Lehrs—Electric or Fuel Heated for Annealing or Decorating • Arches—Interlocking Suspended and Circular • Batch Systems—Vacuum and Conveyor Types • Fuel Oil Systems and Control, Stokers • Cullet Washing Plants, Incinerators • Conveying Equipment—All Types • Water Softening Plants, Silicate of Soda Plants • Producer Gas Plants and Soot Disposal Systems • Air Conditioning Systems • Enameling Ovens—Box and Continuous •

FLOOR TILE MANUFACTURERS PLEASE BE INFORMED

that our **NO-KARB CLAY** is a valuable addition to vitreous tile bodies ..... assuming that you use **EPK Florida Clay** along with it.

EDGAR PLASTIC KAOLIN CO.
Home Office—Metuchen, N. J.

EDGAR BROTHERS CO.
New York Office—50 Church St.

Mines in Georgia and Florida

Refractory Blocks for Glass Tank Furnaces

By

J. H. Partridge, B.Sc., Ph.D.

With a foreword by

Professor W. E. S. Turner, O.B.E., D.Sc.

Pages X + 128. 8½″ x 5½″
+ 37 figs.

Price (bound in cloth) $2.25

Published by

The Society of Glass Technology, Darnall Road, Sheffield 9, England

Glass House Refractories

Flux Blocks
Pots Open & Covered
Refractory Blocks
Highlands Pot Clays
Prepared Mixes
Special Batches

P. B. Sillimanite

Standard Sizes and Shapes to Order

● WE MAKE ● WE SELL

● WE USE OUR OWN

PITTSBURGH
PLATE GLASS COMPANY
Refractories Division
GRANT BUILDING, PITTSBURGH, PA.

THE BULLETIN

IS

A valuable advertising medium for Ceramic Advertizers because it reaches the executives in all the branches of ceramics who decide what materials and equipment are to be purchased and used.

Please note the low advertising rates.

These rates are low because the Society is not operating for profit—all money earned is used to further the activities of the Society which is owned and managed by its members.

	Number of Insertions			
	1	3	6	12
Full Page	$60.00	$54.00	$48.00	$40.00
Half Page	33.00	30.00	27.00	24.00
Quarter Page	18.00	16.50	15.00	13.50
Eighth Page	9.75	9.00	8.25	7.50

Buyers' Guide Listings—

This is a service which *The Bulletin* gives to its advertisers free of charge. This service alone is worth the cost of the ad.

Please write us and let us reserve space in an early issue of

The Bulletin of the American Ceramic Society

2525 North High Street **Columbus, Ohio**

Product Finish Insurance

THERE is satisfaction in knowing that the frit you buy is of the finest quality and that the service is dependable.

There is greater satisfaction in knowing that the frit is *uniformly* fine and that the service is *consistently* dependable.

When you buy Lusterlite Frit you buy *product finish insurance.*

CHICAGO VITREOUS ENAMEL PRODUCT CO.
CICERO ILLINOIS

LUSTERLITE ENAMELS

SPECIALIZATION—SERVICE
EXPERIENCE—RESEARCH

The Attributes of Success Which Make

Outstanding

VITRO COLORS

Write Us for Samples

Coloring Oxides for Enamels
Resistant Colors for Glass
Overglaze and Underglaze Colors
Glaze Stains
Body Colors

THE VITRO MFG. CO.
Corliss Station,
PITTSBURGH, PA.
16 California St.,
SAN FRANCISCO, CAL.

THE VITRO MFG. CO. PAT. MARK PITTSBURG, PA.

For Satisfaction in Production

"CERAMIC"

COLORS

FOR ENAMELS:—Colors and Oxides; Smelter Oxides; Graining, Printing, Banding, and Screening Colors.
FOR POTTERY:—Glaze and Body Stains; Underglaze and Overglaze Colors for Banding, Spraying, and Screening; Fritted Glazes and Fluxes.
FOR GLASS:—Enamels; Vitrifiable Colors for Banding, Spraying, and Screening; Printing Colors; Fluxes; Batch Colors.
DECORATING SUPPLIES:—Printing Tissue; Screening Oils, French Fat Oil, Oil of Copaiba, Balsam Fir, Damar Varnish; Brushes; Knives and Spatulas; Grinding Mills.

CHEMICALS

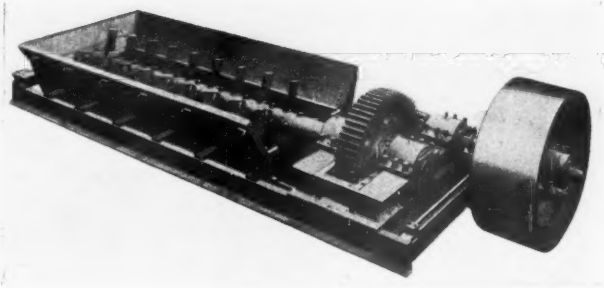
Aluminum Hydrate
Ammonium Carbonate
Antimony Oxide
Antimony, Black Needle
Barium Carbonate
Barium Chromate
Bone Ash
Cadmium Carbonate
Cadmium Oxide
Cadmium Sulphide
Calcspar
Chrome Oxide, Green
Clay, Vallendar
Cobalt Oxide, Black
Cobalt Sulphate
Copper Oxides
Iron Chromate
Iron Oxides
Kryolith
Lead Chromate
Magnesium Carbonate
Manganese Dioxide
Nickel Oxide, Black
Nickel Oxide, Gray
Nickel Sulphate
Potassium Bichromate
Potassium Nitrate
Potassium Permanganate
Powder Blue
Rutile, Powdered
Selenium
Sodium Aluminate
Sodium Antimonate
Sodium Bichromate
Sodium Silicate
Sodium Silico Fluoride
Sodium Uranate
Tin Oxide
Titanium Oxide
Uranium Oxide, Orange
Uranium Oxide, Yellow
Zirconium Oxide

"CERAMIC" COLORS

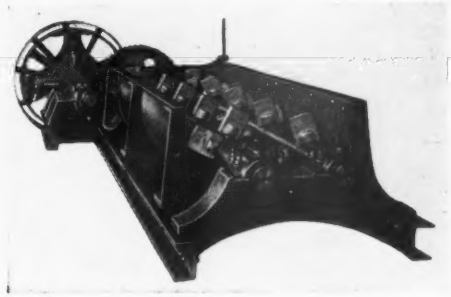
CERAMIC COLOR & CHEMICAL MFG. CO., NEW BRIGHTON, PENNA.

Lancaster

Granulators, Clay Feeders, and Pug Mills

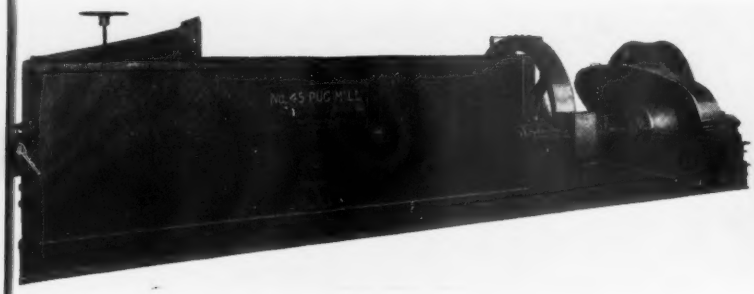


"Big Boy" Heavy Duty Single Shaft Granulator



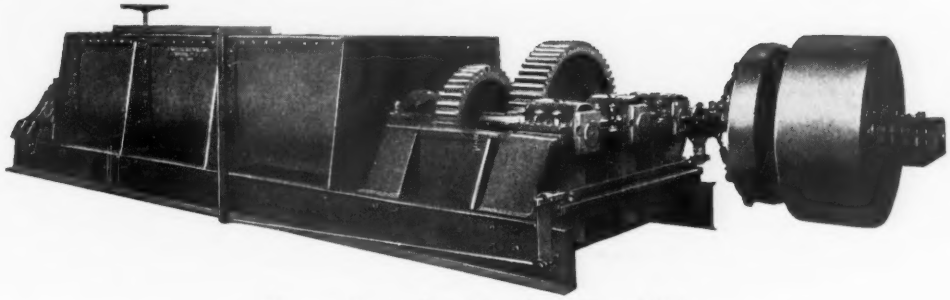
"Martin" Double Shaft Granulator

Any Desired Capacity—Single Shaft or Double Shaft



Standard Single Shaft Pug Mill

AutoClay Feeder



Heavy Duty Double Shaft Pug Mill

The Better the Clay is Prepared, the Better the Product will be.

Let Lancaster Engineers help solve your clay preparing problems

Send for Bulletin No. 20

LANCASTER IRON WORKS, Inc., LANCASTER, PENNA.

BRICK MACHINERY AND MIXER DEPARTMENT, JAS. P. MARTIN, VICE PRES. & MGR.

THE SHARP-SCHURTZ COMPANY

CHEMISTS FOR THE CERAMIC INDUSTRY

WE HAVE FULLY EQUIPPED LABORATORIES AT

LANCASTER, OHIO U. S. A.

EMERSON P. POSTE

CONSULTING CHEMICAL ENGINEER

ANALYSES: CERAMIC RAW MATERIALS AND PRODUCTS, FUELS, IRON AND STEEL, ETC.

SPECIAL INVESTIGATIONS: PHYSICAL AND CHEMICAL TESTS ON ENAMEL, ETC.

309 McCALLIE AVE.,
CHATTANOOGA, TENN.

COMMERCIAL TESTING ● RESEARCH ● ANALYSES

BAILEY & SHARP CO., INC.

CHEMISTS, CONSULTING ENGINEERS, GLASS TECHNOLOGISTS

SPECIALIZING IN NEW AND UNUSUAL ENGINEERING AND CHEMICAL PROCESSES AND IN ORIGINAL DEVELOPMENTS IN THE CERAMIC FIELD.

HAMBURG, N. Y. U. S. A.

WANTED TO BUY OUT-OF-PRINT

Journals of
The American Ceramic Society

June, 1922, Part II
1923 Yearbook 1933 February
1934 January Bulletin January Journal
February Journal March Bulletin
April Bulletin

Communicate with the Offices of

THE AMERICAN CERAMIC SOCIETY

2525 North High Street Columbus, Ohio

THE HOUSE OF HOMMEL

SUPPLIERS OF ALL CERAMIC NEEDS

A HOMMEL SPECIALTY

GLASSMAKER'S GRADE FLUORSPAR

High in Calcium fluoride . . . exceptionally low in silica and iron. Plant production devoted *exclusively* to this grade. Opal glass manufacturers are invited to investigate.

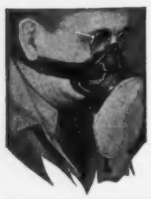
THE O. HOMMEL CO.

Quality First - Since 1891

209 Fourth Avenue Pittsburgh, Pa.

LET OTHERS IMITATE -:- WE ORIGINATE

Pacific Coast Agents
L. H. BUTCHER CO.
Los Angeles - Salt Lake City - San Francisco - Portland - Seattle



WILLSON BAG RESPIRATORS

Nos. 300 and 400 (Patent applied for) have
UNITED STATES BUREAU OF MINES APPROVALS
A Willson style for every dusty operation in the Ceramic Industry.
WILLSON PRODUCTS, Inc. Reading, Pa.

HARTFORD-EMPIRE COMPANY
HARTFORD, CONN.

Engineers and Licensors

FEEDERS FORMING MACHINES CONVEYORS
STACKERS LEHRS

SOLVAY
TRADE MARK REG. U. S. PAT. OFF.
dustless dense
SODA ASH

Made Especially for the Glass Maker

Specify SOLVAY when you buy Soda Ash because Solvay is and has been the standard of quality since 1881. It offers the following advantages:

1. More than 99.50% Sodium Carbonate (dry basis).
2. Proper granulation and absolute uniformity in quality.
3. Your choice of Soda Ash graded for efficient use with any of the known commercial glass sands.
4. The services of a well organized technical staff which is available to Solvay customers.

Make Solvay your source of supply for
DUSTLESS CALCINED 98-100% POTASSIUM CARBONATE
Hydrated 83-85% Potassium Carbonate
Ground Caustic Potash

Full information sent on request.
SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 RECTOR ST. NEW YORK

Ceramic Service? We Give It

We Manufacture—

Pins
Stilts
Thimbles
Spurs
Saggers
Crucibles
Tile for Decorating Kilns

We Sell—

Ball Clay
Sagger Clay
Wad Clay
Ground Fire Clay
Bitstone
Fire Brick
Imported Paris White
Domestic Whiting
Pottery Plaster
Georgia Kaolin

THE POTTERS SUPPLY COMPANY
EAST LIVERPOOL, OHIO

ELECTRO'S SILICON CARBIDE

"FLOATING" CONSTRUCTION!!

THE LATEST ELECTRO INNOVATION
FOR TUNNEL KILN SETTINGS

Eliminates the stresses and strains of Bird-Cage constructions in straight-line or circular kilns. Improves Batt life and reduces setting costs.

WRITE US FOR SPECIFIC RECOMMENDATIONS.

THE ELECTRO REFRACTORIES & ALLOYS CORPORATION
Andrews Building Buffalo, New York.

PAPER MAKERS IMPORTING CO. INC. EASTON, PENNSYLVANIA, U.S.A.

FINEST POTTERY CLAYS

H. C. SPINKS CLAY COMPANY

Miners and Shippers of

BALL, SAGGER AND WAD CLAY

NEWPORT, KENTUCKY

June 1, 1936

Mr. Pete Potter
Comfortable Sanitary Pottery Mfg. Co.
Pottsville, Ohio

Dear Pete:

You of course remember Dr. West, the noted English ceramist. Well, when he attended the American Ceramic Society meeting at Atlanta, one of our successful American manufacturers asked the Doctor how he had determined and made so many discoveries and determinations of ceramic importance. The Doctor answered, "Mostly through mistakes and accidents."

After that I knew we would some day stumble on a good sagger mix; and we have! It will cost you $4.00 a ton and you can mix just enough fire clay with it to make it suit your particular job. The saggers are strong and clean, very little kiln dirt, and THEY LAST.
Do you want to try a car?

Sincerely,

Dick Carothers

General Manager
H. C. SPINKS CLAY COMPANY

RBC:MLN

M&T
Sodium Antimonate

For years M & T Sodium Antimonate has set the standard. The finest opacifier that modern methods can produce, it is always uniform, always pure. Every barrel of M & T Sodium Antimonate is exactly the same, both chemically and physically, as every other barrel.

And, this quality opacifier is more economical. Rejects, due to off colors, become rarities. Whites, whether blue white, cream white or some other hue, do not vary a shade from one year's end to the next where M & T Sodium Antimonate is used.

Our Ceramic Department will gladly help in solving your enameling problems. Homer F. Staley is manager; R. R. Danielson, director of research. Metal & Thermit Corporation, 120 Broadway, New York, N. Y.